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**THE MUSEUM**  
of  
**FAR EASTERN ANTIQUITIES**  
(Ostasiatiska Samlingarna)  
**STOCKHOLM**



**Bulletin N:o 5**

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Stockholm 1933



The figure reproduced on the cover of this Bulletin is a Neolithic ceramic object from the Pan-shan group of Kansu.





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FAR EASTERN ANTIQUITIES  
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STOCKHOLM 1933

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HASSE W. TULLBERG'S BOKTRYCKERI,  
STOCKHOLM 1985.

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## P R E F A C E

In the present volume of our Bulletin our sinologue-collaborator Professor Bernhard Karlgren has contributed a paper ›Word Families in Chinese› in which he has outlined the possibilities of future research intended to unveil the difficult problem of the relationship of the Chinese and kindred Asiatic languages.

Doctor Arthur Waley, the prominent British sinologue, has kindly favoured us with a most scholarly and original study ›The Book of Changes›, which throws an entirely new light upon the significance of one of the classics, the I-ching.

In connection with the international Congress on Art History which met here in Stockholm in September 1933 we arranged two exhibitions, one of Ordos bronzes, the other of early Chinese bronzes. Two important parts of the Ordos material exhibited are here described in the two papers,

J. G. Andersson: ›Selected Ordos Bronzes›,

T. J. Arne: ›Die Funde von Luan P'ing und Hsüan Hua.›

A description of the exhibition of early Chinese bronzes will be published in our Bulletin 6.



# WORD FAMILIES IN CHINESE

BY

BERNHARD KARLGREN

One of the great goals of Chinese historical phonetics is to prepare the ground for comparative Sinitic linguistics — a systematic comparison of Chinese, the T'ai languages and the Tibeto-Burman languages, which are all undoubtedly cognate though widely differentiated idioms. But in my opinion it will not do to pick out isolated Chinese *words* and compare them with isolated Tibetan or Siamese words. It stands to reason that Chinese does not consist of so and so many thousands of independent monosyllables, none of them cognate to any others; in Chinese, as in all other languages, the words form families, groups of cognate words formed from one and the same primary stem. It is not allowable to identify Chinese 目 Arch. *mǐók*<sup>1</sup>) 'eye' with Tibetan *mig* 'eye' so long as we have not first established the word family to which *mǐók* belongs. Akin to *mǐók* is undoubtedly the word 睛 Arch. *mǐóg* 'pupil of the eye': and it is just as likely that it is this *mǐóg* which corresponds directly to the Tibetan *mig*. In other words: before Sinitic comparative linguistics can be safely tackled there remains a great task to be solved in each of the language groups concerned. In Chinese the words must be sorted and grouped according to genetic affinity, and the same must be done in T'ai and in Tibeto-Burman. Then, but only then, we can start comparing the *word groups* of these three great branches and hope for reliable results.

That some words in Chinese are cognate to others is of course no new idea. Already August Conrady in his pioneer work: *Eine Indo-Chinesische Causativ-Denominativ-Bildung*, 1896, had this as a fundamental point of departure. In my *Analytic Dictionary* I have pointed out, in many cases, such affinities between words, not only examples in which one and the same word happens to be represented by two different characters, e. g. 集 *dz'ǐəp*: 輯 *dz'ǐəp*, and hence appears to be two different words, but also cases like 夾 Anc. *kap* 'to press': 狹 Anc. *yap* 'narrow' etc., which are clearly cognate words. Indeed, even the Chinese script often indicates two forms as cognate by designing them with one and the same

<sup>1</sup>) In the present paper Arch. means Archaic Chinese, the language of the Shi king, and Anc. means Ancient Chinese, the language of the Ts'ie yün, time of the Sui dynasty.

character: 長 *d'iang*<sup>1)</sup> 'long': 長 *iāng* 'grow long, grow up'. But it is important to take up this problem of the Chinese word families for a more systematic investigation. The present paper is intended to be a short preliminary notice, as a kind of introduction to a larger work, which I hope to be able to publish soon.

Before entering upon this principal theme I shall have to give some long preparatory chapters. We must not build our study of Chinese word families on the language of the Ts'ie yün (Anc.) which is comparatively late (6th c. A. D.), since we can attain to a fairly detailed knowledge of Archaic Chinese, the language of the Shī king and the (slightly older) *hie sheng* characters (phonetic compound characters) dating from the early part of the Chou epoch. It is about this latter language I first wish to make some fairly extensive remarks.

In my »Shī king Researches» (this Bulletin vol. 4) I have studied certain phonetic categories in Archaic Chinese, and I wish to revert here to some points connected with those categories; and in that work I left the reconstruction of certain other Shī king rime categories for future discussion, and I wish to take them up here for a detailed analysis.

#### CATEGORIES ENDING IN ARCH. DENTAL CONSONANT.

In Ancient Chinese (Ts'ie yün) there are two rimes *-iən* and *-iĕn* between which the words are distributed in an obviously mechanized fashion (Phonol. Chin. p. 174):

*kĕn, kĕuĕn; iĕn, iĕuĕn; lĕn, lĕuĕn; tsĕn, tsĕuĕn; piĕn, 〇 ;*  
*kĭən, kĭuən; 〇 〇 〇 〇 〇 〇 〇 〇 pĭuən.*

The final *iən, iuən* does not exist after palatals and dentals, only after gutturals and labials. It is natural to suspect that this is a result of the general tendency of nivellation, so strongly at work in Chinese, and that Arch. Chinese had both types: *iĕn* and *iĕn*, but that these have been confounded in Anc. *iĕn*.

That this really was so is confirmed by the Shī king rimes. Let us state first that from the word groups here concerned we have to keep entirely separate words with Archaic *ā, a* (long) and *ǎ* (short). They form a Shī king rime category here called A, which is no. 14 in Tuan Yü-ts'ai's famous Liu shu yin kün piao and cat. 9 in Wang Nien-sun's equally important Ku yün pu (in Kao-yu Wang shī i shu).

<sup>1)</sup> The typographical device, always used in my earlier works, of indicating palatal explosives thus: *t', d'* etc. is inconvenient, since the apostrophe is easily confused with the aspiration mark, and is particularly clumsy in conjunction with it, e. g. *d''iang*. I therefore replace it, in the present article, by a bow over the consonant: *t̃, d̃*.

I need not reproduce their tables completely; they can be conveniently summed up in a few type words, for which I insert the Arch. and Anc. sounds:<sup>1)</sup>

干管 顏關 展轉 見涓 聞患 言原。

Arch. *kân, kwân; ngan, kwan; tian, tiwan; kian, kiwan; kân, g'wân; ngiân, ngi'wân.*

Anc. *kân, kwân; ngan, kwan; i'ân, i'iwân; kien, kiwen; kan, ywan; ngim, ngiwm.*

From this rime category A are well distinguished two other Shī rime categories: B, cat. 12 of Tuan's = cat. 7 of Wang's. Here the principal words are:

1 賢年天田甸顛闌電填千翩。2 淵。  
3 姻駟引榛漆臻綦陳臣廬身申神人仁麟親信薪盡燼  
膚濱頻瀕泯。4 均旬詢洵。

1. had Anc. *-ien : yien* etc.;

2. had Anc. *-iwen : i'wen;*

3. had Anc. *-i'ên : i'ên* etc.;

4. had Anc. *-i'üên : k'üên* etc.

C, cat. 13 of Tuan's = cat. 8 of Wang's. Here the principal words are:

1 艮跟。2 昆噲存餽孫遜奔瑞門  
3 勤芹欣隱。4 君章訓魚愠云雲員芬焚翦聞問。  
5 振辰晨畛忍負絡瘡。6 春濟順鵠掎輪洽。  
7 先洒殄。8 艱。9 鰥盼。  
10 巾堽殷慙。11 詵閔。12 隕困。

1. had Anc. *-ən : kən;*

2. had Anc. *-uan : kuan* etc.;

3. had Anc. *-i'ên : g'i'ên* etc.;

4. had Anc. *-i'üên : k'üên* etc.;

5. had Anc. *-i'ên : ts'ien* etc.;

6. had Anc. *-i'üên : ts'üên* etc.;

7. had Anc. *-ien : sien* etc.;

8. had Anc. *-an : kan;*

9. had Anc. *-wan : kwan* etc.;

10. had Anc. *-i'ên : k'ien* etc.;

11. had Anc. *-i'ên : ts'ien* etc.;

12. had Anc. *-i'wen : j'wen* etc.

Two preliminary remarks:

Firstly, I have entered, in a few cases, characters which do not occur in the Shī rimes but which belong to the category, as revealed by rimes in other Archaic texts or by their 'phonetics'. Secondly, the second character in line 11 according

<sup>1)</sup> The 7th character not in the Shī, yet belonging to this category.

to its Anc. sound should stand in the *w* line (12); I have placed it in the *w*-less line (11), since it had no *w* in Archaic Chinese.

This latter phenomenon is an important point, which concerns several common words. I have arrived at the opinion that in Ts'ie yün time there were two kinds of *ho k'ou w*: one is genuine and Archaic, occurring after all kinds of initials, one is secondary and late, occurring only after *p*, *p'*, *b'*, *m* and due to an exaggerated labial articulation of the initial. Whereas genuine *piw*- regularly gives *f(w)*- at the very time of the Ts'ie yün: 方 *piwang* > *fwang*, 分 *piwän* > *fuän*, 非 *pjwxi* > *fwxi* etc., a secondary and evidently more volatile and weak *w* causes no such change. That 丙 Anc. *piwong*, 平 *b'iwong*, 明 *miwong* had really a *w* in Ts'ie yün time is certain (丙 is spelled by 永), but since this *piw*- has not given *fw*- I conclude that the Arch. forms were *piǎng*, *b'iǎng*, *miǎng*, and that the *w* is secondary and parasitic. Such cases are to be found, besides in the table «*keng*», also in the tables «*chi*», «*shan*» and «*chen*» of the Sung rime tables (Phonol. Chin. pp. 149, 171, 177, 185).

If we now revert to our Shī king rime categories B and C and scrutinize them, we find that cat. B in the Ts'ie yün language had exclusively *e* vowels: *-en* or *-ĕn*; cat. C had a rich part with *a*: *-ən*, *-uən*, *-iən*, *-iuən*, and then both *-ĕn*, *-en*, *-ən* and *-en*. To my mind there cannot be the slightest doubt that here in C the *-ən* vocalism is primary and principal, and that all the *-ĕn* and *-en* are secondary. Thus line C 5 was Arch. *iĕn* etc. and line 6 was Arch. *i'iwən* etc.; but whereas *-iən* after the gutturals and labials with *ho k'ou* was preserved down to Ts'ie yün time: line 2 *g'iən*, line 4 *kĭuən*, *pĭuən*, after palatals and dentals and after labials with *k'ai k'ou*, *-ən* became > *-ĕn*: line 5 Arch. *iĕn* > Anc. *tšĭĕn*, line 6 Arch. *i'iwən* > Anc. *tš'iuĕn*. This explains the gaps in the scheme of p. 2 above! In Ts'ie yün there are only types *kĭən*, *kĭuən* and *pĭuən* but no types *iĕn*, *iĭuən*, *tšĭən*, *tšĭuən* etc. — because the latter, which existed in Arch. Chinese, have passed over to *tšĭĕn*, *tšĭuĕn*, *tšĭĕn*, *tšĭuĕn*, thus coinciding with the original (Archaic) *iĕn*, *iwĕn* (lines 3 and 4) of cat. B. Line C 7 is easily explained in consistency with this: just as Arch. *sĭən* (with short *i*) in line 5 became Anc. *sĭĕn* (after dental), so Arch. 先 *sĭən* (with long *i*) became Anc. *sien* (equally after dental).

There seems to be a great difficulty which vetoes this general theory: the words which I have placed in line C 10: 巾 Anc. *kĭĕn* etc. If an Arch. *kĭən* kept its *a* (after guttural): line 2 *g'iən* etc., how could we explain the *kĭĕn* etc. of line 10 with *ĕ* after guttural in this same rime category? The answer to this riddle will be given presently after we have discussed lines C 8, 9, 11 and 12.



The *-an* in lines 8 and 9 cannot be original, for then the words of these lines would have rimed in cat. A above. What their Arch. value was is not difficult to find. In my *Shī king Researches* (pp. 157 and 160) I have shown that 革 Arch. *kek* (with an open, short, slack *ā*- sound: *ε*) and 戒 *keg* (> Anc. *kqi*) rime with *-ək*, *-əg*. Thus *ε* and *ə* regularly go together in the *Shī* rimes. I conclude that the Anc. *-an*, *-wan* (lines 8,9) in our cat. C derive from Arch. *-en*, *-wen*: 8 *ken*, 9 *kwen*.

Next we have lines C 11 and 12. I am happy to be able to improve here my reconstruction system of Anc. Chinese (Ts'ie yün) on this point. For line 11, which is a rime of its own in the Ts'ie yün (no. 19 in the *Nei fu ts'ang T'ang sie pen Ts'ie yün* and in the *Kuang yün*, p'ing sheng) I had not been able to give any independent final at all; for line 12 I had given a very unsatisfactory reconstruction: I had distinguished it from line 6 only by a difference in the *ho k'ou w*: 6 *-iüēn*: 12 *-iüēn*. Now this was very artificial and doubtful, and I have myself stated earlier that a new solution had to be found (*Shī king Researches* p. 126). Our *Shī* rime system helps us to solve the riddle. Lines 11 and 12 are the *ḡ* correspondences to the *-en*, *-wen* of lines 8 and 9: 11 *tsien*, 12 *ḡiwen* (Arch. *ḡiwen*). Anticipating this discussion I have already entered these values in the table on p. 3 above.

We can now revert to the mysterious line 10 巾 Anc. *kien*. It is explained by the system of lines 11 and 12. If we take the latter two together, we have *tsien* and *mien* and we have *ḡiwen*, but we have no type *kien*, i. e. the *k'ai k'ou* final *-ien* after gutturals and laryngals (which are the most frequent of the Chinese initials) is missing. It is obvious that in line 10 巾, 殷 Anc. *kien*, *ien*, which the *Shī* rimes do not carry to cat. B (Arch. *-ien*, *-ien*) but to cat. C (bringing them together with Arch. *-ən*, *-ien*, *-wən*, *-iwen*, *-ien*, *tsien*, *-iwen*) we have the missing type Arch. *kien*. Thus we get an explanation on the one hand of their placing in this rime category C (cf. rime cat. *ek:ək*, *eg:əg* of the *Shī*), on the other hand of their evolution down to Anc. Chinese:

Arch. *k|ien* > Anc. *kien*;  
 » *ts|ien* > » *tsien*;  
 » *k|iwen* > » *kiwen*.

It might be expected that in *ho k'ou*, as well as in *k'ai k'ou*, after guttural *-iwen* would become *-iüēn*. And indeed, there is a strong tendency in this direction. For the word 困 *Kuang yün* gives double readings *ḡiwen* and *kiwēn* (rime 眞, not rime 諄 諄!), for 𨾏 it gives *kiwēn* (not *iüēn*!).

There is one more very strong support for our theory that the Anc. *-ien* of

line 10 (巾 etc.) has a different Arch. origin from the *-iĕn* of cat. B (type 因), that indeed it stood closer to Arch. *-iən* (type 斤), C 3, than did type 因 (B 3). In Go-on, the most ancient dialect of which we have a detailed knowledge, type 因 (B 3), Arch. *-iĕn*, is rendered by *in*; type 斤, 隱 (C 3), Arch. *-iən*, is regularly rendered by *-on*; now, the words 巾, 殷, 慇 of line C 10 are, in Goon, not *kin*, *in*, *in*, but *kon*, *on*, *on*. Evidently, in the dialect that was the basis of Go-on, the Arch. *kien*, *'ien*, *'ien* in these words had become *kien*, *'ien*, *'ien*, thus joining the C 3 type (斤 *kien*, 隱 *'ien*) and not, as in Ts'ie yün, becoming *kien*, *'ien* (joining the B 3 type 因 *'ien*).

We are now able to fill in the Arch. values of our tables B and C:

| B. | Arch.             | Anc.              |  | Arch.            | Anc.               |
|----|-------------------|-------------------|--|------------------|--------------------|
|    | 1. <i>ien</i>     | > <i>ien</i> ;    |  | 2. <i>iven</i>   | > <i>iven</i> ;    |
|    | 3. <i>iĕn</i>     | > <i>iĕn</i> ;    |  | 4. <i>iwĕn</i>   | > <i>iwĕn</i> .    |
| C. | Arch.             | Anc.              |  | Arch.            | Anc.               |
|    | 1. <i>ən</i>      | > <i>ən</i> ;     |  | 2. <i>wən</i>    | > <i>uən</i> ;     |
|    | 3. <i>k iən</i>   | > <i>k iən</i> ;  |  | 4. <i>k iwən</i> | > <i>k iūən</i> ;  |
|    | 5. <i>î iən</i>   | > <i>tš iĕn</i> ; |  | 6. <i>î iwən</i> | > <i>tš iūĕn</i> ; |
|    | 7. <i>iən</i>     | > <i>ien</i> ;    |  |                  |                    |
|    | 8. <i>en</i>      | > <i>ən</i> ;     |  | 9. <i>wen</i>    | > <i>wən</i> ;     |
|    | 10. <i>k iĕn</i>  | > <i>k iĕn</i> ;  |  |                  |                    |
|    | 11. <i>tš iĕn</i> | > <i>tš iĕn</i> ; |  | 12. <i>iwen</i>  | > <i>iwen</i> .    |

To the three *-n* categories A, B and C studied above there correspond three categories D, E and F ending in *-t* and *-d*. Before taking them up for discussion I wish to make a preliminary remark. In my Analytic Dictionary of Chinese (1923) I pointed out that numerous *hie sheng* cases like 割 Anc. *kāt*: 害 *yái*, 列 *liät*: 例 *liäi* reveal an Arch. final dental in *-ái*, *iäi* lost, or rather vocalized into *-i*, before the time of Anc. Chinese; and since there is regularly a falling tone in such cases, I concluded that the loss of the dental which I interpreted as *-d* (*yäd*, *liäd* in contradistinction to *kāt*, *liät*) had entailed the falling tone. In some later articles I modified my theory and said that the Arch. final dental was a *-t* in *yái* and *liäi* as well, and that the falling tone was primary and decided the evolution: whereas 割 *kāt*, 列 *liät* preserved their *-t*, 害 *yät* and 例 *liät* vocalized it because of the falling tone (similarly 白 *b'ok* > *b'ok*; 怕 *p'ok* > *p'a*). This modified theory had great advantages (see

Shī king Researches p. 119); and yet here I make a sudden *volte-face* and revert to my original theory such as it was sketched in my Analytic Dictionary. My reasons for so doing will be given on p. 23 below.

We now revert to the *-t*, *-d* correspondences to categories A, B and C. Two of them (the *-at* and the *-at* groups) Tuan Yü-ts'ai has erroneously confused into one: his cat. 15 (ju sheng section). This is one of the weakest spots in his otherwise excellent Shī rime treatise. Wang Nien-sun is superior on this point; he has clearly distinguished the three categories.

D. Cat. 14 of Wang's = part of Tuan's cat. 15, ju sheng section. The principal words are:

- 1 葛 葛 渴 渴 恒 達 園 ○ 2 帶 大 害 艾 藹 拔 肺 茂 ○  
 3 括 估 活 闊 滅 撥 奪 撮 捋 菱 撥 棘 ○ 4 外 噉 殺 兌 脫 翻 ○  
 5 殺 ○ 6 莖 ○ 7 八 ○ 8 噲 敗 蓮 ○  
 9 桀 竭 揭 孽 舌 烈 滅 ○ 10 厲 柳 趙 哲 世 泄 總 ○  
 11 說 悅 絕 威 ○ 12 悅 說 衛 歲 蹶 ○ 13 截 ○ 14 端 ○  
 15 臺 ○ 16 瘞 ○ 17 刮 ○ 18 拜 ○ 19 搗 竭 保 ○ 20 刈 ○  
 21 蔚 闕 月 越 鉞 發 伐 發 ○ 22 吹 吹 ○

- |   |  |
|---|--|
| 1. had Anc. <i>-āt</i> : <i>kāt</i> etc.;       | 2. had Anc. <i>-āi</i> : <i>tāi</i> etc.;      |
| 3. had Anc. <i>-uāt</i> : <i>kuāt</i> etc.;     | 4. had Anc. <i>-uāi</i> : <i>nguāi</i> etc.;   |
| 5. had Anc. <i>-at</i> : <i>sat</i> ;           | 6. had Anc. <i>-ai</i> : <i>i'ai</i> ;         |
| 7. had Anc. <i>-wat</i> : <i>pwat</i> ;         | 8. had Anc. <i>-wai</i> : <i>k'wai</i> etc.;   |
| 9. had Anc. <i>-iāt</i> : <i>g'iāt</i> etc.;    | 10. had Anc. <i>-iāi</i> : <i>l'ai</i> etc.;   |
| 11. had Anc. <i>-iwāt</i> : <i>iwāt</i> etc.;   | 12. had Anc. <i>-iwāi</i> : <i>siwāi</i> etc.; |
| 13. had Anc. <i>-iet</i> : <i>dz'iet</i> ;      | 14. had Anc. <i>-iei</i> : <i>tiei</i> ;       |
| 15. had Anc. <i>-at</i> : <i>kāt</i> ;          | 16. had Anc. <i>-ai</i> : <i>t'ai</i> ;        |
| 17. had Anc. <i>-wat</i> : <i>kwat</i> ;        | 18. had Anc. <i>-wai</i> : <i>pwai</i> ;       |
| 19. had Anc. <i>-iāt</i> : <i>k'iat</i> etc.;   | 20. had Anc. <i>-iāi</i> : <i>ng'iai</i> ;     |
| 21. had Anc. <i>-iwāt</i> : <i>k'iwāt</i> etc.; | 22. had Anc. <i>-iwāi</i> : <i>b'iwai</i> .    |

There is first a strict parallelism between lines with odd and even numbers. To the final *-t* of the former corresponds *-i* of the latter. This *-i* is the vestige of the lost *-d*, dropped and causing the falling tone (k'ü sheng): whereas 葛 *kāt* has preserved its *-t*, 帶 *tād* has become > *tāi*.

Further the whole of this category corresponds faithfully to the *-n* class in cat. A above. We therefore obtain the following Arch. values:

Category D:

1. *ât*, 2. *ād*; 3. *wât*, 4. *wād*;
5. *at*, 6. *ad*; 7. *wat*, 8. *wad*;
9. *iat*, 10. *iad*; 11. *iwat* 12. *iwad*;
13. *iat*, 14. *iad*;      ○      ○
15. *āt*, 16. *ād*; 17. *wāt*, 18. *wād*;
19. *ǣt*, 20. *ǣd*; 21. *iwāt*, 22. *iwād*;

Category A:

- ân*; *wân*;
- an*; *wan*;
- ian*; *iwan*;
- ian*; (*iwan*);
- ǣn*; *wǣn*;
- iǣn*; *iwǣn*.

We can now pass on to cat. E, being the *-t* and *-d* correspondence to cat. B. The principal words are:

- 1 結結頤啞莖垣株節。2 噫噫。3 血穴。
- 4 吉一逸室實窒秩桎櫛瑟日漆七疾栗慄匹輶駟密。
- 5 至。6 恤。

1. had Anc. *-iet* : *kiet* etc;
2. had Anc. *-iei* : *tiei* etc.;
3. had Anc. *-iwet* : *xiwet* etc;
4. had Anc. *-iēt* : *kīēt* etc.;
5. had Anc. *-i* : *tī*;
6. had Anc. *-iūt* : *siūt*.

Here again 1 and 2, and 4 and 5 respectively had the same Arch. final, differentiated only by the contrast *-t*: *-d*, the latter having vocalized into *-i* and causing a falling tone. We thus obtain the following Arch. values:

Category E:

1. *iet*, 2. *ied*;
3. *iwet*;
4. *iēt*, 5. *iēd*;
6. *iwēt*.

Category B:

- ien*
- iwen*
- iēn*
- iwēn*.

Somewhat more complicated is cat. F, being the *-t* and *-d* correspondence to cat. C. The principal words are:

- 1 ○ 2 既受俊 3 卒沒。4 對對退潰蒼妹內。5 仡。
- 6 氣堅。7 鬱用弟拂。8 貴謂渭蔚味。
- 9 麗。10 利泣肄四駟似比紕寐界。
- 11 出卒述馱率律。12 類遂椹稔醉萃諄瘁穗。
- 13 擊。14 戾棣淥。15 閔。16 惠噫。17 頁。18 屈
- 19 滑。20 簣。21 暨。22 棄器 23 橘。24 匱季悽位。

- |  |   |
|--|---|
| 1. not represented;                                    | 2. had Anc. <i>-di'</i> : <i>kái</i> etc.;      |
| 3. had Anc. <i>-uat</i> : <i>tsuat</i> etc.;           | 4. had Anc. <i>-uái'</i> : <i>tudi</i> etc.;    |
| 5. had Anc. <i>-iat</i> : <i>ngiat</i> ;               | 6. had Anc. <i>-jei'</i> : <i>k'jei</i> etc.;   |
| 7. had Anc. <i>-iuet</i> : <i>'iuet</i> etc.;          | 8. had Anc. <i>jwei'</i> : <i>kjwei</i> etc.;   |
| 9. had Anc. <i>-iét</i> : <i>liét</i> ;                | 10. had Anc. <i>-i'</i> : <i>li</i> etc.;       |
| 11. had Anc. <i>-iuét</i> : <i>ts'iuét</i> etc.;       | 12. had Anc. <i>-wi'</i> : <i>ljwi</i> etc.;    |
| 13. had Anc. <i>-iet</i> : <i>p'iet</i> ;              | 14. had Anc. <i>-iei'</i> : <i>liei</i> etc.;   |
| 15. had Anc. <i>-iwet</i> : <i>k'iwet</i> ;            | 16. had Anc. <i>-iwei'</i> : <i>yiwei</i> etc.; |
| 17. had Anc. <i>-at</i> : <i>kai</i> ;                 | 18. had Anc. <i>-ai'</i> : <i>kai</i> ;         |
| 19. had Anc. <i>-wat</i> : <i>γwat</i> ;               | 20. had Anc. <i>-wai'</i> : <i>k'wai</i> ;      |
| 21. had Anc. <i>-iét</i> : <i>k'iet</i> (family name); | 22. had Anc. <i>-i'</i> : <i>k'ji</i> etc.;     |
| 23. had Anc. <i>-iuét</i> : <i>k'iuét</i> ;            | 24. had Anc. <i>-wi'</i> : <i>kjwi</i> etc.     |

Here again, as in categories D and E, the even numbers had the same Arch. finals as the odd numbers, but for the *-d* of the former and the *-t* of the latter. The *-d* has become *-i* and given falling tone. *-ax* is not represented in the *-t* series (1. *-at*) but only in the *-d* series: 2. *kəd* has become > *kái'* (cf. the *-g* category, where 來 Arch. *lag* has become > Anc. *lái*, see Shī king Researches p. 124). In the same way 3. *-uat* (*-wət*) has been preserved, but 4. *-uəd* (*-wəd*) has become *uái'*. This is nicely confirmed by the char. 逮, which has both readings Anc. *t'uat* and *t'uái'* (Arch. *t'wət* and *t'wəd*).

Furthermore, that 6. *-jei'* is the *-d* correspondence to 5. *-iat*, and *-jwei'* to *-iuet* is proved by a large number of double readings and *hie sheng*, e. g. 气 both readings *k'iat* and *k'jei'* (Arch. *k'iat* and *k'iad*); 蔚 both readings *'iuet* and *'jwei'* (Arch. *'iuet* and *'iwəd*); 沸 both readings *p'iuət* and *p'jwei'* (Arch. *p'iwət* and *p'iwəd*); 弗 *p'iuət* phonetic in 沸 *p'jwei'* (Arch. *p'iwət* phon. in *p'iwəd*) etc.

In this group, just as in cat. C, Arch. *-iat* had a different evolution according as it was preceded by a guttural and labial or by a palatal and dental. Just as Arch. *k|iən* > Anc. *k|iən*, but Arch. *ŋ|iən* > Anc. *ts'ien* (see cat. C above), in the same way line 5. Arch. *k|iət* > Anc. *k|iət*, but 9. Arch. *ŋ|iət* > Anc. *ts'iet*; and in the same way 6. Arch. *k|iəd* > Anc. *k|jei'* but 10. Arch. *ŋ|iəd* > Anc. *ts'i'*. And the case of the *ho k'ou* words is exactly the same: 7. Arch. *k|iwat* > Anc. *k|iuat*, but 11. Arch. *ŋ|iwat* > Anc. *ts'iuét*; and 8. Arch. *k|iwəd* > Anc. *k|jwei'*, but 12. Arch. *ŋ|iwəd* > Anc. *ts'wi'*.

We can continue: just as, with long *i*, Arch. *-iən* > Anc. *-ien*, so here 13. Arch. *-iat* > Anc. *-iet* and 14. Arch. *-iad* > Anc. *-iei'*; 15. Arch. *-iwət* > Anc. *-iwet* and 16. Arch. *-iwəd* > Anc. *-iwei'*.

Finally, just as Arch. *-en* > Anc. *-an*, so 17. Arch. *-et* > Anc. *-at* and 18. Arch. *-ed* > Anc. *-ai*; 19. Arch. *-wet* > Anc. *wat*, and 20. Arch. *-wed* > Anc. *-wai*. And corresponding to Arch. *-ien*, *-iwen* we have here 21. Arch. *k|iət* > Anc. *k|iēt* and 22. Arch. *k|iəd* > Anc. *k|jī*; 23. Arch. *k|iwet* > Anc. *k|iūēt*, and 24. Arch. *k|iwed* > Anc. *k|jwī*.

We can sum up all this in the following table:

| Category F. |            |             |           | Category C. |            |
|-------------|------------|-------------|-----------|-------------|------------|
| Arch.       |            | Anc.        |           | Arch.       | Anc.       |
| 1. (ət)     | 2. əd      | 1. (ət)     | 2. áì     | ən          | ən         |
| 3. wət      | 4. wəd     | 3. uət      | 4. uái    | wən         | wən        |
| 5. k iət    | 6. k iəd   | 5. k iət    | 6. k jēi  | k iən       | k iən      |
| 7. k iwət   | 8. k iwəd  | 7. k iūət   | 8. k jwēi | k iən       | k iūən     |
| 9. i ət     | 10. i əd   | 9. ts iēt   | 10. ts i  | i ien       | ts iēn     |
| 11. i iwət  | 12. i iwəd | 11. ts iūēt | 12. ts wi | i ien       | ts iūēn    |
| 13. iət     | 14. iəd    | 13. iet     | 14. iei   | ien         | ien        |
| 15. iwət    | 16. iwəd   | 15. iwet    | 16. iwei  | o           | o          |
| 17. et      | 18. ed     | 17. at      | 18. ai    | en          | an         |
| 19. wet     | 20. wed    | 19. wat     | 20. wai   | wen         | wan        |
| 21. iet     | 22. iəd    | 21. iēt     | 22. i     | ien         | ien, iēn   |
| 23. iwet    | 24. iwəd   | 23. iūēt    | 24. wi    | iwen        | iwen, iwēn |

In this last category, F, we have had a large number of words with Anc. final *-ei* and *-i*, and I have shown that these are remnants of an Arch. *-d*. Now, the same finals, *-ei* and *-i*, occur in still another great rime category of the Shī, which it is necessary to take up for examination: cat. G, which is cat. 13 of Wang Nien-sun's = cat. 15 of Tuan Yü-ts'ai's (one half of this latter only). The principal words are:

- 1 哀。2 回崑隕推頰摧罪雷壘枚。
- 3 幾畿豈頤晞衣依。4 歸達煒葦圍韡毳威飛菲腓駢  
霏微薇尾。
- 5 脂指旨坻蓄底邸抵鴟砥擇遲師尸尿矢視壽莠梲訛  
資沃咨姊泚玼秣私死兒履毗臙匕妣悲美眉泥靡郿。
- 6 追水維唯鴛惟崔綏纍藟。
- 7 氏弟涕體妻妻樓淒齊齊濟濟濟濟涕犀福滂鯉  
體黎泥迷。8 咍偕階階濫。9 懷懷。10 几飢祁伊。
- 11 葵駸遺。12 通瀟。13 證萎。



- |   |  |
|---|--|
| 1. had Anc. <i>-di</i> : <i>-di</i> ;       | 2. had Anc. <i>-uāi</i> : <i>yūāi</i> etc.;  |
| 3. had Anc. <i>-xi</i> : <i>kjxi</i> etc.;  | 4. had Anc. <i>-wxi</i> : <i>kjwxi</i> etc.; |
| 5. had Anc. <i>-i</i> : <i>tsi</i> etc.;    | 6. had Anc. <i>-wi</i> : <i>īwi</i> etc.;    |
| 7. had Anc. <i>-iei</i> : <i>tiei</i> etc.; |  |
| 8. had Anc. <i>-ai</i> : <i>kai</i> etc.;   | 9. had Anc. <i>-wai</i> : <i>ywai</i> etc.;  |
| 10. had Anc. <i>-i</i> : <i>kji</i> etc.;   | 11. had Anc. <i>-wi</i> : <i>g'jwi</i> etc.; |
| 12. had Anc. <i>-ie</i> : <i>ñie</i> etc.;  | 13. had Anc. <i>-wie</i> : <i>xjwie</i> etc. |

The interpretation of this category might seem to be very simple: nearly all the words end in *-i* and thus rime, and we could, for that matter, suppose it to represent words with original, Archaic final *-i*. But the question is in fact infinitely more complicated and necessitates an extensive investigation.

In the discussion of cat. C above I have purposely left out a few curious rimes, in which Anc. *-ən* rimes with Anc. *-xi*, e. g. 晨 : 輝 : 旂 Anc. *xiēn* (< Arch. *d'ien*): *xjwxi* : *g'jxi* (ode T'ing liao); 芹 : 旂 Anc. *g'ien* : *g'jxi* (ode Ts'ai shu). These cases are all the more interesting since 輝 *xjwxi* has for phonetic 軍 Anc. *kjwən* (with *-n*) and 旂 has for phonetic 斤 *kjən*. They naturally call to mind cases with other vowels in which similarly words with *-n* have riming or *hie sheng* connections with words ending in vowel, e. g. 儺 Anc. *nā* with phon. 難 *nān*; 幡 *b'uā* with phon. 番 *b'iwən* and riming with 翰 *yān* (Yi king, kua 22); 𪛗 *d'ā* with phon. 單 *tān* and riming with 𪛗 *yān* (Tso chuan, Sūan 2nd year). In all these cases it is very natural to think of nasalization phenomena, so that certain *-ān* have become *-a"* > *-ā*, certain *-ien* have become *iə"* > *ie"* > *iēi*. I suggested this in this Bulletin, vol. I, p. 182, and the same has been proposed by Prof. Lin Yü-t'ang in his Yü yen lun ts'ung pp. 82 ff.

The theory would purport that 儺 was originally *\*nān*, 幡 *\*b'wān* and 𪛗 *\*d'ān*, and that 旂 was originally *\*g'ien*, which by nasalization became Anc. *nā*, *b'uā*, *d'ā* and *g'jxi* respectively. But if so, we have to answer the question: how did this nasalization work? If 單 was Arch. *tān* and has always kept its *-n* (Anc. *tān*, Peking *tan*), how could 𪛗, if it was Arch. *\*d'ān*, get its *-n* eliminated by nasalization and become Anc. *d'ā* (Peking *t'o*)? How could they develop differently? In the same way, if both 旂 and 芹 were Arch. *g'ien*, how could the former become Anc. *g'jxi* (Peking *k'i*) and the latter Anc. *g'ien* (Peking *k'in*)? There is no possibility of this within the same line of the language. If it were so, it must be due to a mixing of dialects. Whereas *-n*, in the main line of the language, that of the Shī king and the *hie sheng* characters, High Chi-

nese, was preserved and lived down to Ts'ie yün time, it has been nasalized in one or several dialects which were on the side of (parallel with) the High Chinese: from this side-track dialect, so to speak, a few forms like 𪛗 *d'á*, 旂 *g'jɛi* have then penetrated into High Chinese and there ousted the regular forms \**d'án*, \**g'jɛn* for these words and taken their place. Thus, in Ancient Chinese (Ts'ie yün) we have obtained 𪛗 *d'á* (dialectal loan word) but 單 *tán* (regular form), 旂 *g'jɛi* (dialect form) but 芹 *g'jɛn* (regular form).

In principle, there would be nothing against such an explanation. We could find numerous parallels in other languages. In French, for instance, we have the words *cage*, *canevas*, *caillou*. In High French they should properly read *chage*, *chanevas*, *chaillou* according to the regular phonetic laws of that language, and such forms with *ch-* have really existed earlier, but have been ousted, in High French, by the dialect forms (Picardie, Normandie) *cage*, *canevas*, *caillou*. Again, in High Swedish, the words *spär* (*spör*), *lén*, *strák* (*strök*), *påse* (*pöse*) should regularly have been *spörr*, *lënn*, *strökk*, *pösse* (cf. *börr*, *tënn*, *lökk*, *mösse*), but have got long vowels because they are forms loaned from other dialects than the one which is the regular basis of High Swedish. The same phenomenon can be observed in Pekinese in certain sporadic cases. 孕 and 貞 should regularly give Pek. »ying» and »cheng», but they are pronounced »yün» and »chen» through influence of some dialect in which *-ng* > *-n*. And certain Archaic words have similarly jumped over into Anc. Chin. categories where they should not properly belong: 生 Arch. *sěng* should be Anc. *seng* (Kuang yün rime 13) but was really *smg* (Kuang yün rime 12); 川 Arch. *i'iwən* (cat. C above) should give Anc. *tš'i'uən* (Kuang yün rime 18) but has given Anc. *tš'i'wän* (Kuang yün rime II, 2). It is here always a question of sporadic irregularities.

For a long time, indeed, I have imagined that this solution was the correct one. But the longer I have studied the question, the more I have become convinced that it must be wrong. I have gradually been brought to an opinion which approaches that expressed by W. Simon (Zur Rekonstruktion der altchinesischen Endkonsonanten II, p. 8), though it is by no means identical.

It is necessary here to make a survey of all the most important cases of interchange of final *-n* with final vowel in Arch. rimes, hie sheng characters and kia tsie. I limit the list to those cases that are pre-Han or Han; later examples out of the Ts'ie yün and Tsi yün, concerning words not attested before Liu ch'ao time of course prove nothing about Archaic Chinese. The readings given in this survey are all in Anc. Chinese.

1 儻 2 左 3 難 4 瘴 5 麗 6 龜 7 疹 8 嘽 9 揣 10 揣 11 團  
 12 搏 13 瑞 14 瑞 15 溫 16 戰 17 縵 18 造 19 瑞 20 端 21 擊 22 嬰  
 23 嬰 24 嫵 25 嫵 26 裸 27 濯 28 果 29 番 30 嘽 31 翰 32 瞻 33 翰  
 34 睥 35 碯 36 碯 37 播 38 盤 39 靦 40 洗 41 殄 42 烜 43 燬 44 火  
 45 解 46 販 47 鷄 48 敦 49 遺 50 摧 51 鏐 52 韋 53 慙 54 傲 55 灑 56 燿  
 57 雷 58 威 59 賁 60 變 61 辰 62 屯 63 巨 64 堆 65 翠 66 揮 67 輝 68 輝  
 69 暉 70 晨 71 暉 72 暉 73 暉 74 暉 75 暉 76 暉 77 暉 78 暉 79 暉 80 暉  
 81 偕 82 通 83 近 84 微 85 遠 86 祈 87 祈 88 祈 89 祈 90 祈 91 祈 92 祈  
 93 衣 94 妻 95 私 96 怨 97 至 98 圻 99 畿 100 垠 101 沂 102 衣 103 冠 104 殷  
 105 匪 106 分 107 洗 108 西 109 栖 110 棲 111 茜 112 晒 113 西 114 施 115 先 116 施  
 117 駢 118 殷 119 辰 120 巡 121 戰 122 嶺 123 民 124 門 125 安 126 眠 127 閒 128 洒 129 殄 130 汎 131 犀  
 132 寅 133 北 134 死 135 伊 136 璽 137 祇 138 振 139 震 140 櫓 141 禮 142 選  
 143 兇 144 先 145 還 146 泚 147 滌 148 鮮 149 水 150 弟 151 準 152 悲 153 門。

- I. This is the already mentioned 1. *ná* which in Shī (Chu kan) rimes with 2. *tsá* and yet has *nán* as phonetic.
- II. The word *ná* 'ample' (Shī, Si sang) is written (kia tsie) 3. *nán*.
- III. The word 4. has two Kuang yün readings *tán* and *tá*; phonetic *tán*. Rimes as *tán* in Shī, Pan.
- IV. Is the already mentioned 5. *d'á* (Ts'ie yün but not Kuang yün has an alternative reading *d'án*!) with phon. *tán* and riming with 6. *ngiwm* (Li ki, Yüé ling).
- V. 7. Ts'ie yün *t'á* and *t'án* (T'ang yün also *tá*, not in the Ts'ie yün); has phon. *tá*. Shuo wen quotes Shī, Sī mu, as 7.; the Mao version has 8. *t'án*.
- VI. 9. *tuá*, Shuo wen 'a horse whip', phon. *tuán*. No pre-Han text example.
- VII. 10. Anc. *ts'wig* 'to measure', phon. *tuán*. Used kia tsie for 11. *d'uan* in a *fu* written by Kia Yi († 168 B. C.) in Ts'ien Han shu (k. 48, p. 3 a). Kuo P'o, comm. to Fang yen, reads it *tsiwan*.
- VIII. 13. *zwig*, phon. *tuán*.
- IX. 14. *ts'wig*, phon. *tuán*, rimes (Shī, Siao yüan) with 15. *uwm* and 16. *tsián*, and (Chuang-tsī, Ts'i wu lun) with 17. *muán*. For 14. in Meng-tsī II (Legge p. 187) the Ting version has 18. read *tsiwan*.
- X. 19. Yü p'ien *tuán* and *tuá*, phon. *tuán*; Shuo wen says »read like 20. (*tuán*)».
- XI. 21. *b'uan* and *b'ud*, phon. *puán*.

- XII. 22. *b'uân* and *b'uâ*; it occurs in the bisyllabic expression 23. *b'uân-sân* (Sī-ma Siang-ju, Tsī-hü fu, Wen süan 7, p. 14 a; Li Shan indicates the reading *b'uân*), but this is evidently the same as Shī (Tung men chī fen) 24. *b'uâ-sa* (so also Er ya).
- XIII. 25. *kuân* 'libation'. All ancient commentators (Mao Heng, Hū Shen, Cheng Chung, Cheng Hūan) define it as 26. *kuân* 'libation', and it must be etymologically cognate to this; yet it has 27. *kuâ* as phonetic.
- XIV. 28. *b'iwon* 'a track', *p'iwon* 'a turn', *b'uân*, *p'uân*, *b'uâ* various place-names, *puâ* 'courageous'. In Shī (Sung kao) it rimes with 29 *tân*, *yân*, *xiôn*.
- XV. 30. *b'uâ*, *puâ*. Rimes in Yi king (kua 22) with 31. *yân*, in Tso chuan (Süan 2) with 32. *yân*.
- XVI. 33. *b'uân* a place-name, *puâ* 'stone used for arrow point', cf. 34. *puâ*.
- XVII. 35. *puâ*; rimes in Kuan-tsī (Tī tsī chī, chapter 59) with 36. *b'uân* (the present text is corrupted by adding a word which spoils the rhythm and should be eliminated).
- XVIII. 37. *luâ*, phon. *luân*.
- XIX. 38. *muâi*, has phon. *miân* and rimes in Shī (Sin t'ai) with 39. Arch. *d'im*; there was, however, also a reading *muân* given by the T'ang commentator Ting Kung-chu (*ap.* Sun Shī) to Meng-tsī II (Legge p. 207), and already by Kuo P'o († 324 A. D.) in his comm. to Fang yen (k. 3, p. 4 a).
- XX. 40. *xiwon* 'to dry', Yi king (Shuo kua); *xiwîç* 'fire', Chou li (Sī kuei shī), so read in Kuang yün and King tien shī wen. Both build on Cheng Hūan, who says it is read like 41. (the Ts'i dial. word for 42).
- XXI. 43. *tsiç* (Kuang yün, Yü p'ien, King tien shī wen to Li ki T'an kung, and Tsī lin *ap.* King tien shī wen). Phonetic *tan*. Shuo wen gives a variant 44. with phon. *xiên*.
- XXII. 45. *niei*, phon. *nân*.
- XXIII. 46. frequent in various readings and meanings (many of them *kia tsie*): *tuân*, *tsiüên*, *t'uân*, *d'uân*, *tuâi*. In Shī (Pei men) it rimes with 47. *jwi*, *ts'udi*; it is then read *tuân* by Mao Heng, *tuâi* by Cheng Hūan.
- XXIV. 48. *xiüên* (Arch. *diwon*), *tuân* 'a kind of bell'; *d'udi* 'butt of a spear'. As *d'udi* it rimes in Shī (Siao jung) with 49. *g'iuân*.

- XXV. 50. *d'uđi* with phon. 46. *tuən*. In Sung Yü, Feng fu (Wen süan 13, p. 2 b), it occurs in a bi-nom 51. *d'uđi- yuən*, which I suspect should be read *d'uən-yuən* (after the pattern of innumerable such bi-noms) in spite of the *d'uđi* gloss of the commentary.
- XXVI. 52. *t'uən* and *t'uđi*. Rimes in Shī (Ts'ai k'i) with 53. *luđi*, *'jwgi*.
- XXVII. 54. has a series of Anc. readings: *pji*, *b'jwgi*, *b'juən*, *pjuən*, *b'uən*. To the *pji* of Yi king (kua 22) Cheng Hüan (*ap.* King tien shī wen) says: »it means 55. *pjan*», which is evidently a phonetic gloss (the sense explained by an approximate homophone). In the reading *puən* it rimes with 56. *éjēn* (Arch. *djan*) in Tso chuan (Hi 5).
- XXVIII. 57. *íjuēn* serves as kia tsie for 58. *tuđi* in Chuang-tsī (Chī lo, last section).
- XXIX. 59. *xjwgi*, phon. *kjuən*.
- XXX. 60. *yuən* 'curved handle of a plough'; *xjwgi* 'a clothes-peg'.
- XXXI. 61. *xjwgi* 'light, brightness' rimes in Shī (T'ing liao) with 62. *éjēn* (Legge translates it 'smoke' and reads it »*huān*» i. e. Anc. *xjuən* and Couvreur translates 'fumée' and reads *hiun* i. e. Anc. *xjuən*; they both have followed Chu Hi, who has fabricated a »poetical» reading; Mao Heng says it means *kuang* 'brightness', indicating the ordinary sense and reading of the word; Lu Tê-ming underlines this by saying: »read 63. *xjwgi*). Other readings given by Kuang yün and Tsi yün are *xjuən*, *xjuwm*, *yuən*, for which, however, there are no pre-Han examples. But it is used as kia tsie for 64. *jjuən* in Chou li (Shī tsin) and for 65. *jjuən* in Li ki (Tsi t'ung).
- XXXII. 66. *ngudi* and 67. *'jwgi* rime in Shī (Ku feng) with *'juwm*.
- XXXIII. About 68. *kjuen* Shuo wen says: »it is read like 69. *jwgi*.
- XXXIV. 70. *kjwgi* rimes in Shī (Tung shan) with 71. *san* (not recognized by Tuan Yü-ts'ai, but by both Wang Nien-sun, Kiang Yu-kao and Chu Tsün-sheng).
- XXXV. 72. *kai* and 73. *ńzi* both rime in Shī (Ti tu) with 74. *g'jēn*.
- XXXVI. 75. *mjwgi* rimes in Ta Tai li (Wu ti tê) with 76. *jjuwm*.
- XXXVII. 77. *g'jgi* 'to pray' has phon. *kjēn*.
- XXXVIII. 78. 'name of a herb' read *g'jgi* and *g'jēn*, has phon. *kjēn* and is used as kia tsie on the one hand for 77. *g'jgi* 'to pray' (so often in bronze inscriptions), on the other hand for 79. *kjēn* in Chang Heng, Si king fu (Wen süan k. 2, p. 7 a).

- XXXIX. 80. *g'jɛi* has phon. *kjən* and rimes in Shī (T'ing liao) and in Tso chuan (Hi 5) with 62. *zjən*, and in Shī (Ts'ai shu) with 81. *g'jən*.
- XL. 82. *g'jɛi*, which in Shī (Shī jen) rimes with 83. *'jɛi*, *ts'iei*, *si*, has *kjən* as phonetic and is used as *kia tsie* in Li (T'an kung) either for 84. *k'en* (so acc. to Lu Tê-ning) or rather for 74. *g'jən* (so Chu Tsün-sheng, based on Cheng Hūan's gloss: «equal to 85.»), and also as *kia tsie* in Chou li (K'ao kung ki, Chou jen) for a word 'strong' which Cheng Chung (1 st c. A. D.) reads *k'en*.
- XLI. 86. *g'jɛi*, id. with 87. *g'jɛi*, is also used for 88. *ngjən* and has phon. *kjən*.
- XLII. 89. *ngjɛi* has phon. *kjən* and is used as *kia tsie* for 88. *ngjən* (Ts'ien Han shu, Sū chuan).
- XLIII. 90. *'jɛi* rimes in Ch'u ts'ī (Pu kü) with 91. *kuən*.
- XLIV. 92. Arch. *'jən* is said by Cheng Hūan (comm. to Li Ki, Chung yung) to be read like 90. *'jɛi* by the people of Ts'ī (cf. Lin Yü-t'ang, Yü yen lun ts'ung).
- XLV. 93. *pjwɛi* is used as *kia tsie* for 94. *pjwən* in Chou li (Chung tsai) — so already acc. to Cheng Chung (1st c. A. D.).
- XLVI. 74. *g'jən* is used as *kia tsie* for 80 (77) *g'jɛi* in Li ki (Tsi fa, Couvreur p. 259) — so already acc. to Cheng Hūan.
- XLVII. 95. *sien* and *siei*; phon. *sien*.
- XLVIII. 96. *siei* 'bird's nest' = 97. *siei*. Applied as *kia tsie* to *siei* 'west'. But it is phon. in 98. *ts'ien* and 99. *sjɛn*. For the name 100. «Si shī» Mei Sheng in his Ts'ī fa (Wen süan 34, p. 5 a) writes 101. «Sien shī», and the T'ang commentator Li Shan in his note to this passage quotes Chan kuo ts'ê (Ts'ī ts'ê 4) so as to show that his Kuo ts'ê version had «Sien shī». 96. *siei* rimes, on the one hand in Shī (Liu yüe) with 102. *siei*, *g'jwi*, on the other hand with various *-n* words: in Shī (Sang jou) with 103. *'jən*, *zjɛn*; in Li ki (Tsi i) with 104. *zjwɛn*; in the Yi lin (3: 1, 11: 54, 12: 37, 12: 51, 13: 7, 13: 34, 27: 14, 32: 54, 37: 54, 43: 12, 51: 8) with a long series of *-n* words (105. *tsjɛn* etc.).
- XLIX. 106. *ɬai* 'to sprinkle', *siei* 'to wash'. In the latter reading it is identical with 95. above (*siei*, *sien*). And the character is used as *kia tsie* for various other words in *-n*: *sien* 'respectful' (Li ki, Yü tsao), *sien* and *siei* 'scared' Chuang-tsī, Keng-sang-ch'ü). In Shī (Sin t'ai) Lu Tê-ming reads it *ts'udi*, but it rimes with 107. *d'ien*. *ɬai* 'to sprinkle' should be compared with 108. *sjɛn*, *sien* 'to sprinkle'.



- L. 109. *siei*, phon. *sien*.
- LI. 110. is read both *ien* and *i* by Ts'ie yün, by Yü p'ien and by Lu Tê-ming (Shang shu yin i 1, 3 a). 110. does not occur as a rime, but it is phonetic in various words ending in *-n*.
- LII. 111. *b'ien* and *b'ji* (Yü p'ien, Kuang yün, King tien shī wen). It rimes in Lao-tsī with 112. *si*.
- LIII. 113. *i* is used as *kia tsie* for 114. *ien* in the chapter Hung fan of Shang shu on the stone classics of the Tung Han Hi-p'ing period.
- LIV. For 115. *tsi* in Li ki (Nei tsê, Couvreur p. 666) Cheng Hsün gives the variant 116. *tsien*, and the same character in Shang shu (Wu yi, Couvreur p. 291) is rendered by 117. *tsien* by Sī-ma Ts'ien (Chou kung shī kia).
- LV. Instead of the char. 116. (var. 117) *tsien* in Yi king (kua 32) Shuo wen cites 118. *tsi*.
- LVI. 119. *liei* rimes in Li ki (Li yün) with 120. *siwän*.
- LVII. 121. *siei* rimes in Ch'u ts'ī (Chao hun) with 122. *sien*, *ywan*.
- LVIII. 123. *ts'i* and 124. *mji* rime in Shī (Sin t'ai) with 125. *siän*.
- LIX. 126. *swi* and 127. *d'iei* rime in Shī (Mien shuei) with 128. *tsiüen*.
- LX. 129. *pjiwi* rimes in the Yi lin (64: 5) with 130. *muän*.

We see that the contacts of *-n* words with words ending in vowel are quite numerous, and the dialectal nasalization explanation becomes *eo ipso* somewhat dubious. But it becomes all the more so if we examine some of these cases more closely; the theory is indeed quite hopeless.

In the first place we should have to have recourse to *two* different nasalization phenomena:

a). In cases like XXXIX 旂 *g'iei* with phon. 斤 *kien* and riming with 晨 *ien*, Arch. *ien*, we should have to say that the Anc. *-i* word 旂 *g'iei* had *-n* originally: *\*g'ien* and therefore got its phonetic 斤 and rimed with the *-n* word *ien*. But dialectally it developed *\*g'ien* > *g'ien* > *g'iei*. In other words, a nasalization which did *not* exist in the Shī king language, nor in the *hie sheng* language nor in the main line of the later High Chinese, occurred dialectally, and from this unknown dialect penetrated (through a certain number of loan words) in the Ts'ie yün language.

b). On the other hand, in cases like LVIII: 泚 *ts'i* riming with 鮮 *siän*, we should have to suppose that it was the Anc. *-n* word *siän* which in some Archaic

dialect had been nasalized: *sĭän* > *sĭä<sup>n</sup>* > *sĭäi* and therefore could — in a dialectally coloured Shī ode — rime with the -i word 泚 *ts'i*. In other words: a Shī ode would have revealed to us a nasalization that has left no trace whatever in later times and has not been mirrored in the Ts'ie yün language.

The necessity for two different nasalization theories is already very disturbing; and we should furthermore have to operate with the whole transitions *ien* > *iä<sup>n</sup>* > *iei* and *än* > *ä<sup>n</sup>* > *ä* dialectally already in Shī king time. Whereas 旂 still had its -n: \**g'ien* in a dialect which is the base of a rime like 旂: 芹 *g'ien* (Shī, Ts'ai shu), the originally homophonous 頤 \**g'ien* would already have become *g'iei* in another dialect which is the base of a rime like 頤: 衣 *iei*: 妻 *ts'iei* (Shī, Shī jen). Similarly 西 (XLVIII) would have been \**sien* in the dialect of the ode Sang jou, but *siei* in the dialect of the ode Liu yüe. Whereas 瞿 was \**d'än* in a dialect which is the base of the hie sheng character (phonetic 單 *tän*) and of the rime 瞿: 龜 *ngiwm* in Li ki, Yüe ling, 儺 \**nän* would have been \**nä* already in Shī time in the dialect of the ode Chu kan (riming with 左 *tsä*). All this is extremely unlikely.

In the third place — and worst of all — it is very difficult to imagine the nature of a dialectal nasalization which could explain the -i: -n contacts listed above. It is all very well to say that 鮮 *sĭän* had become dialectally *sĭä<sup>n</sup>* > *sĭäi* in order to rime with 泚 *ts'i*. But what about 山 *šan* (Arch. *sän*) riming with 歸 *kjwei*, or 冠 *kuän* riming with 衣 *iei*? Here we could not very well postulate dialectal transitions *sän* > \**sai*, > *kuän* > \**kuäi*. And even if we were so bold, it would lead to impossible consequences; for if *kuän* > dial. \**kuäi*, in order to rime with *kjwei* (with original -i), how could 儺 \**nän* > dial. \**nä* in order to rime with 左 *tsä*, and not *näi*? All this is plainly impossible.

We have, then, to abandon the nasalization theory as a means of explaining the totality of these -i: -n contacts and search for other ways.

We could, in the next place, imagine the possibility that we have not to do with a dialectal phenomenon but that 旂 was a true Arch. -n word (since it had *kien* as phonetic and rimed with -n words) and yet in some way different from 近 *g'ien*; this, then, would explain why the former has become Anc. *g'iei* and the latter Anc. *g'ien*. A glance at the cases listed above, in which there is contact between -n words and vowel-ending words, convinces us that it cannot have been a question of the vocalism — there are all types of vowels, all of which simultaneously occur in words with -n preserved to this day. Nor can it have been a question of tone.

For certain words it might be tempting to assume a palatalized  $-n$ : 旅  $*g'iən$ : 近  $g'iən$ . This would explain very nicely why  $g'iən$  has become  $g'jɛi$  but  $g'iən$  kept its  $-n$ :  $g'iən$ . On the other hand it would furnish a passable explanation why a supposed 願  $*g'iən$  could rime with a 衣  $jɛi$  — because of its yodized ( $i$ -tasting) final  $-n$ . But we realize immediately the impossibility of this explanation. It would explain only a few cases. It could never be applied to cases like 山 Arch.  $sān$  riming with 歸  $kjwɛi$ , or 匪  $pjwɛi$  kia tsie for 分  $pjwən$ , for we cannot suppose a palatal  $-n$  in  $sān$  and  $pjwən$ , which have their  $-n$  preserved in Ts'ie yün and down to our time; nor would it be applicable to cases like 儺  $nā$  ( $< *nān?$ ) riming with 左  $tsá$ , 幡  $b'uá$  riming with 暱  $yán$ . And it is obvious that no explanation is plausible which does not solve *all* these contact problems, which are certainly connected and must have a common explanation. It would, moreover, be very bold to construct an Archaic antithesis 旅  $g'iən$ : 近  $g'iən$ , for then we should have to find a reason why  $-n$  in the one case was »mouillé»:  $-n$ , in the other not:  $-n$ ; simply to say that this is due to unknown earlier phenomena (in Proto-Chinese) would be very unsatisfactory.

We could, finally, imagine that in all these cases (I—LX) the member ending in Anc. vowel has had an Arch.  $-n$ , but an  $-n$  that was weaker than  $-n$  that was preserved: 旅  $g'iən$  (short  $-n$ ): 近  $g'iən$  (long  $-n$ ), 儺  $nān$  (short  $-n$ ): 難  $nān$  (long  $-n$ ), etc. But this would be, again, to construe a difference imputable to Proto-Chinese phonology, of which we know nothing, which is in itself risky, as just stated. Moreover, since the various  $-i$  words of I—LX above freely rime with the words of the entire Shī rime cat. G above, we should have to construe a weak final  $-n$  in the whole of this category; and this is absolutely impossible, for then we could never explain why this category in normal cases is well distinguished from our cat. C ( $-ən$  group) above.

We see that all these tentative solutions fail. We cannot arrive at a satisfactory explanation so long as we insist upon all these words of types 儺, 幡  $b'uá$ , 旅  $g'jɛi$  etc. having really an Arch.  $-n$ , which has been lost in one way or another. We shall have to start at another end and look more closely into the big group of words ending in  $-i$  (cat. G) and examine whether their  $-i$  cannot have represented something else than  $-n$  or  $-i$  in Arch. Chinese.

Experience from the guttural groups has taught us that Arch. final  $-g$  has to a large extent dropped and given rise to  $-i$ , e. g. 來  $læg$  >  $lái$ , 戒  $keg$  >  $kai$ , 子  $tsiæg$  >  $tsi$ , 賄  $xwæg$  >  $xuəi$  >  $xuái$ . Similarly  $-d$  has become  $-i$ , as described above (categories D, E, F): 釐  $liad$  >  $liái$ , 釐  $l̥iət$  >  $tsi$ , 釐  $g'ád$  >  $yái$  etc. When we now, in our

present *-i* group (cat. G), find words of the types *-äi*, *-ai*, *-xi*, *-iei* etc., it is very natural to suspect that all these *-i* are vocalizations of some final consonant; that would only be in accordance with the well-attested general evolution of the Chinese language. The frequent interchange with words in *-n* shows that in such a case it must be a question of some kind of *dental* final.

This is underlined by the fact that besides the numerous contacts between *-i* and *-n* words in rimes, hie sheng and kia tsie adduced above, also an etymological connection between *-i* and *-n* words can be traced with a great amount of certainty in many cases:

- a. Between 衣 *'jxi* 'clothes' and 隱 *'iən* 'to cover, conceal';
- b. Between 展 *'jxi* 'a screen', 翳 *'iei* 'a screen' and 隱 *'iən* 'to cover, conceal';
- c. Between 依 *'jxi* 'to lean on' and 隱 *'iən* 'to lean on' (common expression: *nyin ki* 'to lean on a stool');
- d. Between 幾 *kjxi* 'near to' (common expression *ki hu* 'near to') and 近 *g'iən* 'near to';
- e. Between 畿 *g'jxi* ('close quarters':) 'Royal domain proper' and 近 *g'iən* 'near to';
- f. Between 饑 *kjxi* 'famine', 飢 *kji* 'famine' and 饑 *g'iən* 'famine';
- g. Between 水 *swi* 'water' and 準 *tsiüən* (Arch. *iüən*) 'a water level';
- h. Between 圍 *jwxi* 'to encircle, surround': and 運 *jüən* 'to turn round';
- i. Between 緯 *jwxi* 'woof': and 緯 *jüən* 'woof'.
- k. Between 飛 *pjwxi* 'to fly' and 奮 *pjüən* 'to start flying'.

Here, still more than in the rimes, the hie sheng and the kia tsie, it comes out clearly that *-i* is the vestige of a lost dental.

When it now comes to determining the nature of this dental final, it will not do at all to pose, as W. Simon (*op. cit.*) does, the same dental here as in categories D, E, F: cases like 例 *liäi* which has 列 *liät* as phonetic (Simon writes 例 *liäd*, 旂 *g'jed*). They are absolutely different. In the *liäi* type (cat. D, E, F) — Arch. *-d* — there is an interchange with *-t* in rimes and hie sheng; here, in the 旂 *g'jxi* type (cat. G) there is an interchange with *-n* (cases I—LX above). The two types practically never mix.

In the *-i* words of our cat. G, the dental final cannot have been a *-t*, for as a rule they do not rime with ju sheng *-t*; we cannot suppose 旂 Arch. *g'jet* etc.

It cannot have been a *-d* for the same reason. The *-d* words are in cat. F, and rime frequently with the *-t* words, just as experience from other groups shows us that e. g. *-ək* and *-əg* rime quite freely. But with cat. F our cat. G here has

very few rime connections (see p. 24 below); on the other hand, the *-t*, *-d* words practically never rime with *-n* words, but we have just seen how our cat. G here has quite considerable *-n* connections. A *-d* is therefore just as much excluded as a *-t*; we cannot construe 旂 Arch. *g'jed* etc.

It cannot have been an *-n*. We have already discussed extensively why 旂 cannot have had an *-n*. To suppose 旂 *\*g'ien* (>*g'jɛi*) 禮 *\*lien* (>*liei*), 回 *\*g'uán* (>*yuái*) is impossible, for then we could never explain why we have Anc. 近 *g'ien*, 憐 *lien*, 丸 *yuán* with preserved *-n*.

In other words: the final dental cannot have been *-t* or *-d* or *-n*. What is then left? Evidently *-r*, *-l* and *-s*.

It is a remarkable fact that Tibetan, to which Chinese is undoubtedly cognate, has a great number of words of the types *-r*, *-l*, *-s*, e. g. *dur*, *dul*, *dus* etc. It is but reasonable to expect some corresponding word types in Chinese, and the only phonological group in which these can very well be suspected of lurking is our very category G of the Shī rimes, i. e. words ending in Anc. *-i*. I have stated elsewhere and on p. 1. above that I consider it premature to try to compare isolated Tibetan and Chinese words; the following cases are therefore not meant as positive identifications but only as examples of how it might turn out that Chinese words correspond to Tibetan *-s*, *-r* and *-l* words:

Tib. *g-nis* 'two' = Chin. 二 *ní* (W. Simon, Tibetisch-Chinesische Wortgleichungen 1930, p. 29);

Tib. *lus* 'body' = Chin. 體 *t'iei* (Simon p. 30; the phonetic of the char. is *liei*);

Tib. *bras* 'rice' = Chin. 米 *miei* 'rice' (Simon, p. 30);

Tib. *'p'ur* 'to fly' = Chin. 飛 *pjwɛi*;

Tib. *k'or* 'to return' = Chin. 歸 *kjwɛi*;

Tib. *ser* 'finger' = Chin. 指 *tɕi*;

Tib. *ts'il* 'fat, grease' = Chin. 脂 *tɕi* (Simon, p. 27).

A possible indication of a final *-r* is to be found in the word 師 Anc. *ɕi*, belonging to our cat. G, which was applied in early Han time to denote the 'lion', an animal earlier unknown in China. The question is interestingly linked with another loan word, designated by various words of the category. Pelliot has cleverly seen that all these forms point to an *-r*. He writes (T. P. XXVI, 1929, p. 141): »La boucle de ceinture en métal fut désignée d'un nom Hiong-nou, qui apparaît dans les textes chinois sous les transcriptions 鮮卑 *ɕjān-pjiɛ*, 師比 *ɕi pji* . . . 犀毗 *ɕiei-b'ji*, 犀比 *ɕiei-pji* . . . 私銀 *ɕi-b'ji*; la forme originale du nom est inconnue . . . naturellement le nom . . . évoque spontanément celui des tribus *Sien-pi*

(écrit de même manière) . . . il n'est pas impossible que le vieux nom des Sien-pi survive dans les tribus 室韋<sup>1)</sup> *che-wei* des T'ang, et ceci supposerait un original ancien du type \**Sārbi*, \**Serbi* (par une coïncidence curieuse, le 師 de 師比 a servi de transcrire sous les Han un nom étranger du lion qui pourrait bien être aussi à -*r* finale et s'apparenter au persan *šēr*)\*. Pelliot is very probably right about the final -*r* in these words. *ši* 'lion' would then transcribe an Iranian *šary*, according to what my friend Prof. G. Morgenstierne tells me.

If thus the words of our cat. G. ended primarily in -*r*, -*l*, -*s*, it is clear that in Shī king time they did not end, some of them in -*r*, others in -*l* and others again in -*s*. They all rime regularly and freely with each other, and there is no possibility of subdividing the category into smaller groups according to -*r*: -*l*: -*s*. Either all had -*r* or all had -*l* or all had -*s*.

The choice is not difficult. The final in question was -*r*. An -*s* in them all is easily excluded. In rimes like 旂 *g'jēi*: 芹 *g'jēn* we cannot pose a 旂 *g'jēs*, and 斤 *kjēn* could not serve as phonetic in a 旂 *g'jēs*; nor could 匪 *piwēi*, if it were an Arch. *piwās*, serve as kia tsie for 分 *piwān*. -*r* and -*l* are equally possible from the point of view of rimes, hie sheng and kia tsie. A rime like 旂 *g'jēr*: 芹 *g'jēn*, a hie sheng like 旂 *g'jēr*: 斤 *kjēn* and a kia tsie like 匪 *piwēr* for 分 *piwān* are passable; they are not good, and therefore only occur as exceptions (cases I—LX above), being indeed makeshift rimes and somewhat poor hie sheng and kia tsie, but still they might occur occasionally; -*l* would be equally good and equally bad as -*r*: *g'jēl*: *g'jēn*, *piwēl*: *piwān*. But my decision for -*r* and against -*l* depends upon the fact that it is easier to imagine an evolution Proto-Chinese -*s* > Arch. -*r* (e. g. 二 *nīās* > *nīār*) than P. C. -*s* > Arch. -*l* (*nīās* > *nīēl*). The latter would go against all linguistic experience. The former is a common and well-known transformation. I need only recall the Germanic final -*s*, which regularly gives Old Icelandic -*r*: Got. *sunus*: Icel. *sunr*; and of the »rhotacism» in Latin (*genes-* > *gener-* in *generis*, *es* > *er* in the verb *esse*). Particularly suggestive, moreover, is the cognate language Tibetan, where there is sometimes an interchange of -*s*: -*r* as final consonant: *mdzes-pa* 'beautiful': *mts'ar-ba* 'beautiful'; *byus* 'misfortune': *byur* 'misfortune', etc.

I conclude, therefore, that the three Proto-Chinese types *a | s*, *a | l*, *a | r* have all become Arch. *a | r* and that the whole of our cat. G ended in -*r*.

That I am here on the right track seems to me to be confirmed, once we go back to the table of cat. G on p. 11 above and fill in the Arch. values. It turns

<sup>1)</sup> In T'ang time *šičō-jwēi*.



out that this category with dental final, *-r*, forms an exact parallel to two other categories with dental finals, *-n* and *-t* (*-d*) studied earlier, categories C and F, and this I consider to be a strong corroboration:

| Cat. G. (p. 11)  |                 | Cat. F. (p. 10)               |                                  | Cat. C. (p. 10) |                              |
|------------------|-----------------|-------------------------------|----------------------------------|-----------------|------------------------------|
| Arch.            | Anc.            | Arch.                         | Anc.                             | Arch.           | Anc.                         |
| 1. <i>ər</i>     | > <i>ái</i>     | ( <i>ət</i> ), <i>əd</i>      | > —, <i>ái'</i>                  | <i>ən</i>       | > <i>ən</i>                  |
| 2. <i>wər</i>    | > <i>uái</i>    | <i>wət</i> , <i>wəd</i>       | > <i>uət</i> , <i>uái'</i>       | <i>wən</i>      | > <i>uən</i>                 |
| 3. <i>k ǝər</i>  | > <i>k ǝǝi</i>  | <i>k ǝət</i> , <i>k ǝəd</i>   | > <i>k ǝət</i> , <i>k ǝǝi'</i>   | <i>k ǝən</i>    | > <i>k ǝən</i>               |
| 4. <i>k ǝwər</i> | > <i>k ǝwǝi</i> | <i>k ǝwət</i> , <i>k ǝwəd</i> | > <i>k ǝwət</i> , <i>k ǝwǝi'</i> | <i>k ǝwən</i>   | > <i>k ǝwən</i>              |
| 5. <i>ǝǝər</i>   | > <i>tǝǝi</i>   | <i>ǝǝət</i> , <i>ǝǝəd</i>     | > <i>tǝǝǝt</i> , <i>tǝǝi'</i>    | <i>ǝǝən</i>     | > <i>tǝǝǝn</i>               |
| 6. <i>ǝǝwər</i>  | > <i>tǝǝwi</i>  | <i>ǝǝwət</i> , <i>ǝǝwəd</i>   | > <i>tǝǝǝwət</i> , <i>tǝǝwi'</i> | <i>ǝǝwən</i>    | > <i>tǝǝǝwən</i>             |
| 7. <i>ǝər</i>    | > <i>iei</i>    | <i>ǝət</i> , <i>ǝəd</i>       | > <i>iet</i> , <i>iei'</i>       | <i>ǝən</i>      | > <i>ien</i>                 |
| 8. <i>er</i>     | > <i>qi</i>     | <i>et</i> , <i>ed</i>         | > <i>at</i> , <i>qi'</i>         | <i>en</i>       | > <i>an</i>                  |
| 9. <i>wer</i>    | > <i>wqi</i>    | <i>wet</i> , <i>wed</i>       | > <i>wat</i> , <i>wqi'</i>       | <i>wen</i>      | > <i>wan</i>                 |
| 10. <i>ǝer</i>   | > <i>i</i>      | <i>ǝet</i> , <i>ǝed</i>       | > <i>ǝǝt</i> , <i>i'</i>         | <i>ǝen</i>      | > <i>ǝen</i> , <i>ǝǝn</i>    |
| 11. <i>ǝwer</i>  | > <i>wi</i>     | <i>ǝwet</i> , <i>ǝwed</i>     | > <i>ǝǝwət</i> , <i>wi'</i>      | <i>ǝwen</i>     | > <i>ǝwen</i> , <i>ǝǝwən</i> |

This tallies beautifully as far as lines 1—11 of the G table on p. 11 are concerned. There are then but two lines left to be explained: 12. Anc. *ńǝǝǝ* and 13. *ǝǝwǝǝ*. The rime examples of these two lines are very few and have to be considered as exceptional, just as occasional confusions can occur between other regularly distinguished categories. Just as there are irregular rime contacts *a : ə* (categories A : C) e. g. in Shī, Ch'u ts'ī: 嫫 *hān* (A): 愆 *k'ian* (A): 孫 *suən* (C); in Shī, Siao jung: 羣 *g'iwən* (C): 苑 *ǝwǝn* (A); so we have here some occasional *a : ə* contacts: line 12. Arch. *ńǝǝr*, *mǝǝr*, 13. Arch. *ǝǝwar*, *ǝǝwar* riming with *-ər* words.<sup>1)</sup>

In connection with our table above it is the proper place here for reverting to the question of the Arch. final *-d* (see p. 7 above). That I have had to abandon my idea of *-t* in falling tone > *-i* and go back to my construction *-d* > *-i* of my Analytic Dictionary is just because the *-t* theory does not satisfy the general system of the Archaic language. I have shown earlier (following up

<sup>1)</sup> The phonetic series 爾 is very enigmatic. Itself Anc. *ńǝǝǝ* < Arch. *ńǝǝ*, the word had no final consonant. But on the one hand it is used as *kia tsie* for 耳 Arch. *ńǝǝg* and its derivate 彌 Anc. *mǝǝǝ* is used for 弭 *mǝǝǝ* < *mǝǝǝg*, which all points to final guttural; on the other hand it is phonetic in 滿 Anc. *ńǝǝi* < *ńǝǝr* and 通 Anc. *ńǝǝǝ* < *ńǝǝr* with dental final. To say, with Tuan Yü-ts'ai, that in Chou time it belonged to cat. 15 (*-r*) but in Han time to cat. 16 (*-g*) is a poor expedient. Very likely we have here several distinct series confused at a very early epoch.

ideas first advanced by W. Simon) that Arch. Chinese had both *-k* words and very large groups of *-g* words. It would be strange indeed if it possessed *-t* words and *-r* words but no *-d* words. All probability, then, speaks in favour of a *-d*, not *-t*, in the *-i* sections of categories D, E, F above. But probability is not the same as proof. I have obtained the proof in another way. I have stated above that cat. F. does *not* rime, as a rule, with cat. G, i. e. *-r* words. But there are some exceptions, and these are highly significant. I shall give some examples:

1 閔濟 2 至禮 3 利濟 4 利禮 5 致示死 6 隧哀階 7 至  
濟死 8 比累水 9 棄飢 10 至視 11 至利視 12 利威指 13 位  
氣威 14 痔磴 15 慄猷。

1. Shī, Tsai ch'ī; 2. Shī, Pin chī ch'u yen; 3. Yi, Hi ts'ī, hia; 4. Li ki, Fang ki; 5. Li ki, Ju hing; 6. Li ki, K'ü li; 7. Ch'u ts'ī, Kiu pien 6; 8. Sung Yü, Kao t'ang fu; 9. Shu, Shun tien; 10. Chuang-tsi, Chī pei yu; 11. Sün-tsi, Ch'eng siang; 12. Han Fei-tsi, Chu tao; 13. Han Fei-tsi, Kie Lao; 14. Kuan-tsi, Sin shu; 15. Sung Yü, Feng fu.

The words to the left of the colon belong to cat. F, those to the right to cat. G (*-r*). Now, the striking fact is that in one case only (15) have I been able to find a real *ju sheng -t* riming with *-r*. In all the other cases it is a question of the final dental, which was lost before Anc. Chinese, causing a falling tone, the dental which I had first interpreted as *-d* and later as *-t*. It is quite evident here that the former interpretation must be right. For if it had been a *-t*, there is no reason whatever why *-r* should rime more with *-t* than with *-t*. If, on the other hand, it was a *-d*, it is but reasonable that *-r* rimes more easily with *-d* than with *-t*. We can then well understand the cases above: as a rule neither *-t* nor *-d* rimed with *-r*; yet exceptional rimes *-d: -r* could sometimes occur, *-d* and *-r* being sufficiently similar phonetically, but hardly ever *-t: -r*.

These are the considerations that have forced me back to my original construction of *-d* (and of *-g* in 怕 etc.) in my Analytic Dictionary. It is true that it will then be necessary to find an explanation of the phenomena discussed in my Shī king Researches p. 120. I shall revert to that question on another occasion.

If we now, having arrived at a final *-r* as the solution of cat. G, go back to the cases I—LX on p. 13 above — it must be remembered that after all they are exceptional cases, makeshift rimes, hie sheng and kia tsie — we obtain the following results:

- I. 1. *nār* has phon. *nān* and exceptionally rimes with 2. *tsā* (an occasional contact *-ār: -d* is phonetically not very shocking; cf. the High

- English pronunciation of *far* with the *-r* brought out practically only when followed by a vowel).
- II. *nār* 'ample' is written *kia tsie* by 3. *nān*.
  - III. 4. double readings *tār* and *tān*.
  - IV. 5. *d'ār* and *d'ān* has phon. *tān* and rimes with 6. *ngiŵǎn*;
  - V. 7. *t'ār* and *t'ān* with phon. *tā* (cf. I above).
  - VI. 9. *twār* with phon. *twān*.
  - VII. 10. *t'īwar*, phon. *twān*, used *kia tsie* for 11., 12. *d'wān*, read *ḡiŵǎn* < *ḡiwan* by Kuo P'o.
  - VIII. 13. *ḡiwar*, with phon. *twān*.
  - IX. 14. *tīwar*, with phon. *twān*, riming with 15. *·wān*, 16. *tīan*, 17. *mwān*. For *tīwar* in Meng-tsi Ting reads 18. *tīwan*.
  - X. 19. *twān* and *twār*, phon. *twān*, Shuo wen: »read like 20. *twān*.»
  - XI, XII, 21, 22. *b'wān* and *b'wār*, phon. *b'wān*.
  - XIII. 25. *kwān*, phon. 27 *kwār* (that this »*kuo*» series had all *-r* is confirmed by the fact that it does not rime in the *-ā* category (Tuan cat. 17)).
  - XIV. 28. *b'īwǎn*, *p'īwǎn*, *b'wān*, *p'wān*, *b'wār*, *pwār*.
  - XV. 30. *b'wār*, *pwār* riming with 31, 32 *g'ān*.
  - XVI. 33. *b'wān*, *pwār*. How this stands to 34. *pwā* is an intricate question; it must reasonably show that forms with lost *-r* must already have existed very early.
  - XVII. 35. *pwār*, riming with 36. *b'wān*.
  - XVII. 37. *lwār*, phon. *lwān*.
  - XIX. 38. *mwār*, *mwān*.
  - XX. 40. *ḡiŵǎn*, *ḡiwar*, 41. *ḡiwar*; observe that 42. must have had two Arch. readings: *ḡwər* in the Shī king (rimes regularly in cat. G) and *ḡwār* > T'sie yün *ḡuā* > Mand. »*huo*».
  - XXI. 43. *tīar*, phon. *tān* (or 44. *ḡiən*).
  - XXII. 45. *niər*, phon. *nān*.
  - XXIII. 46. *twān*, *tīwān*, *t'wān*, *d'wān*, *d'wān*, *d'wār* (riming with 47. *g'īwer*, *ts'wər*).
  - XXIV. 48. *ḡiŵān*, *twān*, *d'wār* (*d'wār* riming with 49. *g'īwān*).
  - XXV. 50. *d'wār*.
  - XXVI. 52. *t'wān*, *t'wār*, riming with 53. *lwār*, *·īwār*.
  - XXVII. 54. *pīar*, *b'īwār*, *b'īwān*, *pīwān*, *b'wān*; *pīar* explained (Cheng Hūan) by 55. *pīan* (< *plīan*).
  - XXVIII. 57. *tīwān* *kia tsie* for 58. *twār*.

- XXIX. 59. *ɣiwar*, phon. *kɿwən*.  
 XXX. 60. *g'wən* and *ɣiwar*.  
 XXXI. 61. *ɣiwar*, riming with 62. *ɖiən*, *kia tsie* for 64, 65. *giwən*.  
 XXXII. 66. *ngwər* and 67. *ɿwar* riming with *ɿwǎn*.  
 XXXIII. 68. *kɿwən*. Shuo wen says: «read like *ɿwar*» (a gloss based on an approximate phonetic resemblance).  
 XXXIV. 70. *kɿwar* riming exceptionally with 71. *sǎn*.  
 XXXV. 72. *ker* and 73. *ɳiər* riming with 74. *g'ien*.  
 XXXVI. 75. *mɿwar* riming with 76. *giwǎn*.  
 XXXVII. 77. *g'ier*, phon. *kien*.  
 XXXVIII. 78. *g'ier* and *g'ien*, *kia tsie* for 77. *g'ier* and for 79. *g'ien*.  
 XXXIX. 80. *g'ier* with phon. *kien* rimes with 62. *ɖiən* and 81. *g'ien*.  
 XL. 82. *g'ier* rimes with 83. *ɿər*, *ts'ier*, *sier*, has phon. *kien* and serves as *kia tsie* for 84. *k'ən* or more probably for 74. *g'ien*.  
 XLI. 86. *g'ier* serves as *kia tsie* for 88. *ngien*.  
 XLII. 89. *ngier* has phon. *kien* and is used as *kia tsie* for 88. *ngien*.  
 XLIII. 90. *ɿər* rimes exceptionally with 91. *kwǎn*.  
 XLIV. 92. *ien* is said by Cheng Hüan to be read, by the Ts'i people, like 90. *ɿər*.  
 XLV. 93. *piwar* used as *kia tsie* for 94. *piwən*.  
 XLVI. 74. *g'ien* used as *kia tsie* for 80. (77.) *g'ier*.  
 XLVII. 95. *sien* and *sier* with phon. *sien*.  
 XLVIII. 96. *sier* = 97. *sier*, *kia tsie* for *sier* 'West', phon. in 98. *ts'ien* and 99. *sien*. The *sier* 'West' rimes with 102. *sier*, *g'iwər*, and with 103. *ien*, *ɖiən*, 104. *dz'iwən* etc.  
 XLIX. 106. *ser* 'sprinkle', *sier* 'to wash', *kia tsie* for *sien* 'respectful', *sier* 'scared'. In Shī, Sin t'ai, read *ts'wər*, riming with 107. *d'ien*; cognate to 108. *sien* 'to sprinkle'.  
 L. 109. *sier*, with phon. *sien*.  
 LI. 110. *ɖien* and *ɖier*.  
 LII. 111. *b'ien* and *b'ier*, riming with 112. *sier*.  
 LIII. 113. *ier*, used as *kia tsie* for 114. *ien*.  
 LIV. 115. *lier*, has the variant 116. *lier*.  
 LV. 116. (117.) *lier* has the variant 118. *lier*.  
 LVI. 119. *liər* rimes exceptionally with 120. *sɿwǎn*.  
 LVII. 121. *sier* rimes with 122. *sien*, *g'wən*.

LVIII. 123. *ts'iar* and 124. *mjar* rime with 125. *sian*.

LIX. 126. *šiwär* and 127. *d'iar* rime with 128. *šiwän*.

LX. 129. *pjar* rimes with 130. *mwän*.

Though these rimes, *hie sheng* and *kia tsie* are exceptional, yet they are sufficiently numerous to show that the Chinese in Archaic times had a very strong feeling for the close affinity between *-n* and *-r* words. This was *not only* due to the phonetic similarity (a rime like *'iar : kwän* must be said to be phonetically very poor) but also and above all because they had numerous word pairs in *-n*: *-r* which they knew and felt to be cognate, two aspects of the same stem. Here we revert to the examples on p. 20 above:

- a) *'iar* 'clothes': *'ien*, 'to cover, conceal';
- b) *'iar* 'a screen', *'iar* 'a screen': *'ien* 'to cover, conceal';
- c) *'iar* 'to lean on': *'ien* 'to lean on';
- d) *kjar* 'near to': *g'ien* 'near to';
- e) *g'iar* 'close quarters, Royal domain proper': *g'ien* 'near to';
- f) *kjar* 'famine', *kier* 'famine': *g'ien* 'famine';
- g) *šiwär* 'water': *šiwän* 'a water-level';
- h) *giwär* 'to encircle': *giwän* 'to turn round';
- i) *giwär* 'a woof': *giwän* 'a woof';
- k) *piwär* 'to fly': *piwän* 'to start flying'.

To these cases we can now add the following, out of our cases I—LX above, which are clearly such double aspects of the same stem:

- III, 4. *tär* and *tän* 'distressed';
- IV, 5. *d'är* and *d'an* 'iguana';
- V, 7. *t'är* and *t'an* 'exhausted';
- X, 19. *twär* and *twän* 'hanging ears of grain';
- XI, 21. *b'wär* and *b'wän* 'to eliminate';
- XIX, 38. *mwär* and *mwän* 'to defile';
- XX, 42, 41, 40. *xwär*, *xwär*, *xiwar* and *xiwän* 'fire';
- XXVI, 52. *t'wär* and *t'wän* 'in complete array';
- XXXVIII, 78. *g'iar* and *g'ien* 'name of a herb';
- XLVII, 95. *sär* and *sän* 'to wash';
- XLIX, 106. *ser* and *šien* 'to sprinkle';
- LI, 110. *djar* and *dien* 'respectful';
- LII, 111. *b'iar* and *b'ien* 'female'.

The cases are sufficiently numerous to make a seemingly bold theory of an alternation  $-r \sim -n$  within the same word stem plausible. Moreover, we find a very suggestive parallel to this in Tibetan, where there is a frequent alternation both of  $-r \sim -n$ , of  $-l \sim -n$  and of  $-r \sim -l$ :

$-r \sim -n$ :

*sbur-ma* 'chaff': *spun-pa*, *sbun-pa*, 'chaff';  
*gčer-ba* 'bare, naked': *rjen-pa* 'bare, naked';  
*'byor-ba* 'to arrive': *'byon-ba* 'to arrive';  
*dkor* 'rare, precious': *dkon* 'precious thing';  
*gnyer-ba* 'take pains with': *nyen-pa* 'to be pained, labour hard';  
*nyer-ba* 'to tan, make soft': *mnyen-pa* 'flexible, soft';  
*star-ba* 'to tie fast': *brtan-pa* 'firm', *gtan* 'to bar (a door)';

$-l \sim -n$ :

*p'ul* 'complete, perfect': *p'un* 'complete, perfect';  
*rtsol-ba* 'to be diligent, to endeavour': *brtson-pa* 'to be diligent, to endeavour';  
*'dral-ba* 'to pull down, tear to pieces': *'dren-ba* 'to pull, tear out';

$-r \sim -l$ :

*dgar-ba* 'to separate': *'gol-ba* 'to separate';  
*'byer-ba* to give way, be removed': *'byol-ba* 'to give way, step aside';  
*gžor-ba*, *gžer-ba* 'to weigh': *gžal-ba* 'to weigh';  
*k'al* 'a burden, load': *k'ur* 'a burden, load';  
*'jur-ba*, *'dzur-ba*, *'č'or-ba* 'to evade': *'jol-ba* 'to evade';  
*sbyor-ba* 'to join, mix': *spel-ba* 'to join, mix';  
*'k'yer-ba* 'to carry away', *'k'ur-ba* 'to carry': *skyel-ba* 'to carry away', *'k'yol-ba* 'to be carried'.

*'k'or-ba*, *k'yir-ba* 'to turn round': *'k'al-ba*, *'kel-ba* 'to twist, to spin', *'k'yil-ba* 'to twist';

*sgor-ba* 'to boil': *skol-ba* 'to boil'.

The reconstruction system of Archaic Chinese sketched here means that I have come to the conclusion that an  $-i$  as final and principal vowel of an Arch. syllable did not exist at all;  $i$  (strong, vocalic) or  $\dot{i}$  (short, consonantic) occurred exclusively as a »medial  $i$ «, a subordinate element inside the syllable, combined with other vowels. This means that on an important point I have to waive my objections (»Tibetan and Chinese«, TP 1931, p. 24 ff.) to W. Simon's reconstructions, in so far as he has concluded a final dental in our cat. G (though not the  $-r$  at

which I have arrived). It might seem that I should then also have to give up my there expressed criticism of and objections to his general theories of the Sinitic final consonants. I have (*loc. cit.* p. 31, 32) adduced a great number of forms from all kinds of Sinitic languages for the word stems 'four' (四 *Anc. si*), 'to die' (死 *Anc. si*) and 'water' (水 *Anc. swi*) and shown that everything points to Sinitic roots ending in vowel, not in dental consonant; I have therefore objected to Simon's construing a Proto-Tibetan 四 *bzið* and 死 *sið* on the strength of Chinese forms in dental — a dental which I contested. Now, when because of rimes like 四 : 紕 : 界 (*si:*) *biəd* : *piəd* (the *-d* in the last two is certain for hie sheng reasons) I have to acknowledge the *-d* in 四 *siəd*; and when, for all the various reasons given above, I have to admit the *-r* in 死, it would seem to be a corollary that I accept Simon's Proto-Tibetan *bzið*, *sið* (or such-like, at least some dental final) which would mean a dental final in these words in Sinitic.

But in spite of appearances it does not. In my article just quoted I have given ample examples showing that we have to distinguish Chinese *-k* and *-t* words with primary (general Sinitic) *-k* and *-t*, e. g. 六 *Arch. liók* (p. 18), 八 *pwat* (p. 15) which have their *-k* and *-t* in the great majority of the Sinitic languages, and words with Chinese *-k* and *-t*, in which these *-k* and *-t* must be an innovation, some kind of suffix in one or several Sinitic languages but not primary and common to them all. As such examples I have given 百 *Arch. pāk* 'hundred', (p. 17), 日 *njēt* 'sun' (p. 19), 月 *ngjwāt* 'moon' (p. 21) — they all have typically vowel-ending Sinitic roots. It is just the same with the final *-g* in 九 *kjūg* 'nine', which must be a special Chinese feature, without correspondence in other Sinitic languages (Tib. *dgu* etc., *op. cit.* p. 36). Now, the words 'four' (Tibetan *bzi* etc.), 'to die' (Tib. *si* etc.) and 'water' (Tibetan *č'u* etc.) are typical vowel-ending Sinitic roots (*op. cit.* pp. 31, 32) and from the Arch. Chin. 四 *siəd*, 死 *siər*, 水 *siwər* I dare not, by any means, conclude any Sinitic dental finals. Their final consonants may be just as particularly Chinese as the *-t* in 日 *njēt* and 月 *ngjwāt*.

It should be emphasized that it is only because of the contrast with the well-known cases with real Sinitic *-k*, *-t* (六, 八), in which *-k* and *-t* do appear in a great number of Sinitic languages, showing that Sinitic *-k*, *-t* should not disappear in all languages except Chinese, that I refuse to see a primary Sinitic *-t* in cases like 日 *njēt*, 月 *ngjwāt*, and *-d* in 四 *siəd*. If it were not for that contrast, I would not deny the theoretical possibility of a primary Sinitic *-d* in the latter, having been dropped in all languages except Chinese. This would in itself be theoretically admissible. We must remember that — apart

from Chinese — for one language only, Tibetan, we know a stage as ancient as the 7th c. A. D.; for Siamese only the 13th c. A. D. Most of the Sinitic languages we know only in their modern and certainly very strongly evolved forms. We could never, from all the modern Germanic languages, reconstruct an Ancient Germanic language in the very least similar to the Anc. Germanic we know thanks to Gothic texts and to comparative Indo-European linguistics. From Icelandic *steinn*, German *Stein*, Swedish *sten*, English *stone* we could never suspect the Anc. Germanic *stainaz*. The reason for this is obvious. There were inherent in the Germanic peoples certain common psychological tendencies which have caused their languages to evolve — even after the cohabitation of the peoples was broken — along parallel lines. Hence *stainaz* has lost its final consonant and its vowel of the ending in these languages independently of each other and by a parallel evolution. Just the same may have taken place in all the Sinitic languages, so that by a parallel evolution they all lost their *-d* in 'four' except Arch. Chinese (and later on Chinese as well). That is why I say that I conclude against such a wholesale dropping of a final *-d* in 卅 *sɿəd* only because of the contrast with words with preserved Sinitic final consonants.

It is quite necessary to keep in mind this possibility of independent and yet parallel evolutions, once we think of a comparison between e. g. Siamese and Chinese. In his work «Le dialecte de Tch'ang-ngan sous les T'ang» (BEFEO 1920) H. Maspero has given a series of Siamese-Chinese word comparisons, some of which seem quite convincing.<sup>1)</sup> If we dress a table with the Siamese forms, the Anc. Chinese (6th c. A. D.) and the Arch. Chinese as reconstructed by me, the Siamese forms seem to afford crushing evidence against my Archaic reconstructions:

|   | S.          | Anc.         | Arch.        |
|---|-------------|--------------|--------------|
| 九 | <i>kəo</i>  | <i>kɿəu</i>  | <i>kɿŭg</i>  |
| 舊 | <i>kəo</i>  | <i>g'ɿəu</i> | <i>g'ɿŭg</i> |
| 丘 | <i>k'əo</i> | <i>k'ɿəu</i> | <i>k'ɿŭg</i> |
| 牛 | <i>nguə</i> | <i>ngɿəu</i> | <i>ngɿŭg</i> |
| 告 | <i>klau</i> | <i>káu</i>   | <i>kóg</i>   |
| 袋 | <i>tai</i>  | <i>d'ái</i>  | <i>d'əg</i>  |
| 害 | <i>hai</i>  | <i>ɣái</i>   | <i>g'ád</i>  |
| 雞 | <i>kai</i>  | <i>kiei</i>  | <i>kiər</i>  |

<sup>1)</sup> They are of course on the whole very uncertain; on p. 84 Siam *k'ao* is given as equivalent to Chin. 丘, on p. 86 Siam. *k'uə* as equivalent to the same word!



It would seem that Siamese forbids the reconstruction of the Arch. final consonants. And yet, in several of these very words there are absolute proofs of their existence:

**舊** rimes in Shī with **時**, which frequently rimes with *-k* (e. g. Chuang-tsī: Ta tsung shī, Huai-nan-tsī: Lan ming, Yi Chou shu: Tu hün etc.);

**丘** rimes in Ch'u tsī with **之**, which frequently rimes with *-k* (e. g. Shu: Lü hing, Sün-tsī: Kün tao); and it rimes in Sün-tsī: Ta lue with **背**, the final *-g* of which is certain from the element **北** *pək*;

**牛** rimes in Shī with **哉**, which frequently rimes with *-k* (e. g. Chuang-tsī: Ta tsung shī and Shan mu etc. and which has the same phonetic as **載**, which latter again regularly rimes with *-k* and is used for **則** *tsək*) and in Chuang-tsī with **來** which regularly rimes with *-k* (dozens of examples);

**告** has two Anc. readings *káu* and *kuok* and regularly rimes with *-k* (*passim*); there cannot be the slightest doubt about its Arch. final guttural;

**袋** has the same phonetic as **駭** *d'ək*, and as **貸** *t'ai* and *t'ək*; its phonetic **代** has phon. **弋** (*d)ək*;

**害** *γai* is phonetic in **割** *kāt* and serves as *kia tsie* for **曷** *γāt*.

Thus, in spite of Siamese, we cannot but acknowledge the Arch. final consonants in these words, and I can see no reason why Proto-T'ai could not have had final consonants as well, lost or changed into *-u*, *-i* in the same fashion as in Chinese, and thanks to parallel evolutions.

It is, indeed, interesting, in this context, to observe the parallelism of Tibetan and Chinese sound evolutions during the last millennium on several striking points. Just as the ju sheng *-t* has been lost in the whole of Northern China: **八** *pwat* > *pa*, **七** *ts'jēt* > *ts'i*, **骨** *kuat* > *ku* etc., so Tib. final *-d* has been lost in the Central provinces: *nad* > *nä*, *bod* > *b'ö*, *dpyid* > *či* etc. And just as certain voiced initials, i. e. explosives, affricates and fricatives, have become surd in the whole of Chinese, except the Wu dialects, so certain voiced initials, namely fricatives, have become surd in Tibetan: Chin. **是** *zí*, > *ši*, **祥** *zjang* > *siang*, Tib. *ža* > *ša*, *za* > *sa*.

#### CATEGORIES ENDING IN ARCH. GUTTURAL CONSONANT.

Having finished the investigation of the words ending in Arch. dental, I wish to take up once more the question of the word groups ending in *-k*, *-g*, *-ng*, extensively treated in my Shī king Researches. Professor Li Fang-kuei has recently

published an article: «Ancient Chinese -ung, -uk, -uog, uok etc. in Archaic Chinese» (Bull. Nat. Research Inst. Hist. Phil. vol. III, pt. 3, 1933), which is largely a polemic against my conclusions and a system of reconstruction of his own. This article is full of interesting observations and ideas, and on some points I can revise my system thanks to his proposals; on the whole, however, I cannot accept his conclusions, and his reconstruction scheme is in my opinion quite impossible.

Among the points which seem to me to be acceptable, I first mention his opinion that the hie sheng characters must be somewhat older than the Shī king odes, a fact which I had doubted earlier. In fact, in the -at category above (F) there are certain phenomena which confirm Li's opinion. We find there, quite regularly, 內 and 對 riming with -t words, which clearly indicates Shī *nwəd*, *twəd*. But that 內 had originally a -b is quite certain. The labial final is brought out by 納 Arch. *nəp* (Anc. *nāp*, Mand. *na*), originally written simply 內, and it is obvious that this Arch. *nəp* 'to bring in': 內 *nwəb* 'interior': 入 *n̥iəp* 'to enter' are but three aspects of the same stem. And 對 *twəb* 'to answer, vis-à-vis, etc.' stands to 答 *təp* 'to answer' just as *nwəb* 'interior' stands to *nəp* 'to bring in'. In Shī time *nwəb* had become *nwəd* by dissimilation.<sup>1)</sup>

Another valuable point in Li's treatise concerns the words treated on pp. 136—140 in my Shī king Researches, e. g. 路. This was an original *glág*, since it had 各 *kldk* for phonetic. And yet it rimes in Shī king with words of type 故 *ko* and never with ju sheng *tsdk* etc. Li had assumed earlier that it had lost its final -g already between hie sheng time and Shī king time. But since type 故 *ko* regularly rimes with type 家 *kā*, and type 路 rimes with type 故 *ko* but not with type 家 *kā*, I had concluded that 路 could not be simply *glo* in Shī, and so I had supposed an implosive final: 家 *kā*: 故 *ko*: 路 *glo<sub>k</sub>*. Now Li proposes, instead, a final laryngal: 路 *glo*· («glottal stop»), which is an extremely common substitute in modern dialects for an earlier ju sheng -k, and he thus obtains a nice system of rimes: *kā*: *ko*; *ko*: *glo*·; but never *kā*: *glo*·, the latter two being too dissimilar phonetically. This I think is much better than my own explanation. We have therefore to state that final -g was still living, in Shī times, after *e*, *ə*, *o* and *u* (e. g. 來 *lэг* riming with -k) but that after the vowel *a* it very early became· (glottal stop): 路 *glág*, 怕 *p'äg*, 夜 *ziag* became *glá*·, *p'a*·, *ziá*·, and these again *glo*·,

<sup>1)</sup> When I speak of the age of the hie sheng characters, I should express myself more precisely. Many of the hie sheng characters of later ages were written in early Chou time without radicals, i. e. they were properly speaking only *kia tsie* characters to which later on specializing radicals were added. From the linguistic point of view it is of course immaterial whether the «phonetic» was used alone or whether it was written with an elucidating signfic («radical»).

*p'o'*, *zjo'* in the Shī language, which explains the rimes in Tuan Yü-ts'ai's cat. 5, which are otherwise inexplicable.

So far, so good. But for the rest Li's constructions are very disappointing. He seems to start from an assumption that every Arch. vowel must exist in combination with every Arch. final consonant — if there are gaps, the construction must be wrong. The chess-board of  $8 \times 8 = 64$  squares must have every one of the 64 squares filled; if not, we are on the wrong track. This is a funny axiom, to say the least of it. I know of no language with such a structure, and I fail to see why Chinese should be one. He finds in Anc. Chinese, in the *-əng* group:

1 登 2 肱 3 〇  
4 兢 5 〇 6 弓

|                |                |                |
|----------------|----------------|----------------|
| 1. <i>əng</i>  | 2. <i>wəng</i> | 3. 〇           |
| 4. <i>ɿəng</i> | 5. 〇           | 6. <i>ɿung</i> |

Since there is no Anc. *ɿwəng* and no Anc. *-ung* (in this Shī rime group), he concludes for Arch. Chinese:

|                |                |                   |
|----------------|----------------|-------------------|
| 1. <i>əng</i>  | 2. <i>wəng</i> | 3. 〇              |
| 4. <i>ɿəng</i> | 5. 〇           | 6. <i>ɿwəng</i> . |

This looks very nice indeed, but it is extremely embarrassing, once it has to be applied to the corresponding words with *-k* and *-g*:

1 得 2 國 3 〇  
4 五 5 域 6 國  
7 來 8 灰 9 母  
10 子 11 邇 12 久

In Anc. Chinese they were:

|                |                 |                 |
|----------------|-----------------|-----------------|
| 1. <i>tək</i>  | 2. <i>kwək</i>  | 3. 〇            |
| 4. <i>kɿək</i> | 5. <i>ɿwək</i>  | 6. <i>ɿkuk</i>  |
| 7. <i>lɿi</i>  | 8. <i>χuɿi</i>  | 9. <i>mɿu</i>   |
| 10. <i>tsi</i> | 11. <i>kjwi</i> | 12. <i>kɿɿu</i> |

On the analogy of his interpretation of the *-ng* words, Li has to assume *the same* Arch. final for 5. and 6.; for 8. and 9.; and for 11. and 12. Thus:

|                  |                  |                  |
|------------------|------------------|------------------|
| 1. <i>tək</i>    | 2. <i>kwək</i>   | 3. 〇             |
| 4. <i>kɿək</i>   | 5. <i>ɿwək</i>   | 6. <i>ɿwək</i>   |
| 7. <i>lɿg</i>    | 8. <i>χwɿg</i>   | 9. <i>mɿwɿg</i>  |
| 10. <i>tsɿɿg</i> | 11. <i>kɿwɿg</i> | 12. <i>kɿwɿg</i> |

But since it is impossible that an Arch. *-iwək* could give sometimes Anc. *-iwək* and sometimes *-iuk*; that an Arch. *-wəg* could give sometimes Anc. *-uđi* and sometimes *-zu*; and that an Arch. *-iwəg* could give sometimes *-wi* and sometimes *-izu*, he has to find explanations for these divergent treatments.

In the first place (5: 6) he has to deal partly with labial-initialled words, e. g. 副 *p'iwək*: 服 *b'iuk*. These cause no real difficulty, for in *p'iwək* the *w* is a »false ho k'ou« (see p. 4 above) and the Arch. form was *k'ai k'ou p'iek*. Partly he has to deal with guttural-initialled words: 域 (*g)iwək*: 囿 (*g)iuk*, and here Li has no better way out of the difficulty than to refer to »analogy»: 囿 *\*giwək* has become Anc. (*g)iuk* by analogy, through influence of other *-iuk* words in another Shī rime group — but 域 *giwək* (Anc. *jiwək*) has *not* undergone this analogical influence! And he passes this somewhat severe judgment (p. 391): »We have so far in discussing Chinese phonology made little use of analogy, but such a forceful principle so well attested in many languages cannot leave no trace in Chinese . . . . Karlgren's reconstructions, I believe, fail because . . . he fails to recognize certain analogical processes which are of paramount importance». I am afraid I know sufficiently well the part played by analogy in various languages to be aware that it cannot be drawn upon in Li's haphazard and hazy way: if we explain an evolution by analogy, we have to show which particular word or words have been influenced by which other particular word or words, and why they have done so; and we are certainly *not* allowed to explain a 囿 *\*giwək* > *jiuk* by »analogy» unless we show at the same time why 域 *giwək* has *not* equally become *jiuk* but remains Anc. *jiwək*. Li has here left the field of linguistic science.<sup>1)</sup>

In the second place Li has to explain why certain *-wəg* have become *-uđi* and others *-zu* (8: 9). Here he has found a very clever explanation. He thinks there is a tone difference: *-wəg* in shang sheng (rising tone) became *-zu*, *-wəg* in p'ing sheng (even tone) became *-uđi*. This would be a brilliant expedient — if it were true. In order to prove it to be so Li gives statistics drawn from the Kuang yün. He serves us a series of characters many of which are of Liu ch'ao make and did not exist in Chou, Ts'in or Han time — and consequently prove nothing at all (this is a methodical fault which recurs throughout Li's paper). If we keep to the really pertinent words, above all those existing in the Shī king, we find e. g. 培 *b'zu* in p'ing sheng which according to Li should be *b'uđi*, and 每 *mudī* and 悔

<sup>1)</sup> It must be remembered that it is not a question here of a fluctuation between *iwək* and *iuk*, such as in Pekinese, where 'to learn' can be read both *hūe* and *hiao* and *hūo*, 'horn' both *kūe* and *kiao* and *kūo* through a mixing of dialects. Here there are certain words which have exclusively Anc. *iwək* and certain others which have exclusively *iuk*.

*χuđi* in shang sheng, which according to him should be *mzu*, *χzu*. The latter two are particularly important, since they are two of the most common words in the language. Li has to consider these *mudí*, *χuđi* in shang sheng as «exceptional»!

If Li's tone theory is thus an obvious failure, I think none the less that I was wrong, in my *Shi king Researches*, in supposing 9. Arch. *mug*. It must be observed that 9. -*zu* occurs exclusively after labials: *pzu*, *b'zu*, *mzu*. And on the other hand 7. *đi* occurs after all kinds of initials: *kđi*, *tđi*, *lđi*, *tsđi*, e x c e p t l a b i a l s; there are no *pđi*, *b'đi*, *mđi*. I conclude that 9. *mzu* is the labial-initialled class answering to those 7. *đi*: 7. *kəg* > *kđi*, *ləg* > *lđi*, *tsəg* > *tsđi*: 9. *məg* > *mzu*.

There is one objection to this theory which may seem fatal: a general rule in the hie sheng characters says that k'ai k'ou and ho k'ou words do not serve for each other. A *kán* is very rarely phonetic in a *kuán* or *vice versa*. But here we have 母 *mzu* phonetic in 每 *mudí*. Is it then possible to reconstruct 母 Arch. *məg* phonetic in 每 *mwəg*?

Yes, it is. For the words with labial initials are exceptions from the general rule. A few examples will suffice to show this:

1 非排: 分貧: 麻摩: 曼慢: 門閤: 元晚: 皮波。

1. Anc. *pjwəi*: *b'ai*; 2. *pjwən*: *b'ičn*; 3. *ma*: *mud*; 4. *muán*: *man*; 5. *muən*: *mīčn*; 6. *mjān*: *mjwəm*; 7. *b'jig* (< *b'ia*): *puđ*. Thus a *məg* can very well serve as phonetic in a *mwəg*. Moreover, this same 每 *mwəg* is undeniably phonetic, again, in a plainly k'ai k'ou word: 海 *χái* (< *χməg*).

In the third place Li has to explain why certain -*iwəg* become -*wi* and others -*iəu* (11:12). It is true that half of the enigmatical cases in question can be eliminated. There are both guttural-initialled words (*kjwi*: *kjzu*) and labial-initialled words (*pjwi*: *pjzu*) in our category. The *pjwi* etc. have not become T'ang (and later) *fi*, but have preserved their *p*-, which shows the ho k'ou *w* here to be secondary, a parasitic addition to the initial *p*- (see p. 4 above). Thus they were not Arch. *pjwəg* but *pjəg* and need cause no trouble. But there always remains the contrast *kjwi*: *kjzu* for Li to explain; there he cannot refer to the tones, so he thinks that the contrast is due to «a dialectal difference or maybe variations in one dialect». This, then, would be cases of the kind which I have exemplified on p. 12 above: a mixing of dialects, the Ts'ie yün language having obtained, from sister dialects, certain words -*wi* which have ousted the regular -*iəu* or *vice versa*.

This last idea is of course not impossible in itself, though we shall see presently that it is not at all necessary. But when we find that Li, in order to surmount

the *three* serious difficulties which obstruct his reconstruction scheme, has to resort to *three* different explanations: one theory of analogy which is not scientifically founded; one tone theory which is disavowed by the most common of the words in question; and one theory of »dialectal variations» inside the Ts'ie yün language — then it is impossible to follow him.

The simple truth is that the five Anc. endings *-ək*, *-wək*, *-iək*, *-iwək*, *-iuk* cannot successfully be reduced to *one* Arch. final *(i)(w)ək*; and the six Anc. endings *-ái*, *-uái*, *-əu*, *-i*, *-wi*, *-iəu* cannot successfully be reduced to *one* Arch. final *-(i)(w)əg*. I have every possible reason to remain by my own earlier reconstruction (except for 9.):

|                |                 |                  |
|----------------|-----------------|------------------|
| 1. <i>ək</i>   | 2. <i>wək</i>   | 3. <i>o</i>      |
| 4. <i>iək</i>  | 5. <i>iwək</i>  | 6. <i>iuk</i>    |
| 7. <i>k əg</i> | 8. <i>wəg</i>   | 9. <i>m əg</i>   |
| 10. <i>iəg</i> | 11. <i>iwəg</i> | 12. <i>iug</i> . |

If I do so, however, I have to give an acceptable answer to two questions: why did *-iung*, *-iuk*, *-iug*, exist in this Shī rime group but no *-ung*, *-uk*, *-ug*? And why does *-iung* rime with *-əng*, *-iəng*, why does *-iuk* rime with *-ək*, *-iək*, nay even with *-ək* — an apparently very unsatisfactory rime from the acoustic point of view? I think it is possible to answer both these questions (see p. 43 below).

If Li has been so keen on eliminating my *iung*, *iuk*, *iug* in this rime category, it is because he thinks he has found these Arch. finals in quite another Shī rime group cat. 9. of T'uan's, cat. 1. of Wang's. We find in this category words of the five Anc. types:

1. 江 Anc. *kāng*: 2. 工 *kung*: 3. 宮 *kīung*: 4. 冬 *tuong*: 5. 恭 *kīwong*.

And, correspondingly in the ju sheng:

1. 角 *kāk*: 2. 谷 *kuk*: 3. 菊 *kīuk*: 4. 酷 *k'uok*: 5. 曲 *k'iwok*.

It has been a much debated theme among Chinese philologists, whether Anc. *-āng*: *-ung*: *-iung*: *-uōng*: *iwong* form one rime category in Shī king or two (and whether *-āk*: *-uk*: *-iuk*: *-uok*: *iwok* form one or two). The two greatest authorities, Tuan Yü-ts'ai and Wang Nien-sun both voted for *one* category (Wang, however, only as far as the *-ng* words were concerned), and they were followed by the brilliant linguist Chu Tsün-sheng. But two other great experts, K'ung Kuang-sen and Kiang Yu-kao, thought it possible to distinguish two *-ng* classes (and two *-k* classes). One is formed by Anc. *-āng*, *-ung* and *iwong*; one is formed by Anc. *-uōng*

and *-iung*. Li Fang-kuei follows the latter. By adducing extensive materials he shows that not only in the Shī rimes but also in the hie sheng characters there are frequent and close connections between Anc. *-āng: -ung: -i Wong* (and between *-āk: -uk: -i wok*) on the one hand, between *-uong: -iung* (and between *-uok: -iuk*) on the other; but that a mixing of an *-uong* or an *-iung* into the *-āng: -ung: -i Wong* series, or, *vice versa*, of an *-āng*, an *-ung* or an *i Wong* into the *-uong: -iung* series (and similarly in the *-k* groups) is a comparatively rare phenomenon (though by no means unknown). There cannot be the slightest doubt, to my mind, that he is right. A seeming obstacle, the character 降 Anc. *kāng*, which regularly goes together with *-uong*, *-iung* and not with other *-āng* nor with *-ung*, *-i Wong* he shrewdly guesses to be a word different from other Anc. *kāng*. He draws the perfectly legitimate conclusion that my earlier reconstruction system:

|       | 1.         | 2.         | 3.          | 4.          | 5.            |
|-------|------------|------------|-------------|-------------|---------------|
| Arch. | <i>āng</i> | <i>ong</i> | <i>iong</i> | <i>uong</i> | <i>i Wong</i> |
| Anc.  | <i>āng</i> | <i>ung</i> | <i>iung</i> | <i>uong</i> | <i>i Wong</i> |

is defective, since it does not explain these curious rime and hie sheng interrelations 1: 2: 5 versus 3: 4. He therefore thinks that Anc. *-āng: -ung: -i Wong* had one kind of principal vowel in Arch. Chinese, *-uong: iung* another. And since the former series contains *-āng*, he decides that those were Arch. 1. *-āng: 2. -ong: 5. -iong* (*-ong* becoming Anc. *-ung*, and *iong* breaking into *-i Wong* just as *-io > -iwo*, proved by me), whereas the latter were 4. *-ung: 3. -iung* (*-ung* breaking into Anc. *-uong*). Similarly Anc. 1. *-āk: 2. -uk: 5. -i wok* were Arch. *-āk: -ok: iok*, forming one rime group, and Anc. 4. *-uok: 3. -iuk* were Arch. *-uk: -iuk* forming another rime group.

This looks all very nice, and I admit that at first sight I was strongly tempted to accept it. And yet it is inadmissible. There are various obstacles. So far Li is right that the two sub-categories had a difference in principal vowel; but for the rest he is quite off the right track.

In the first place it must be remembered that a *strict* distinction between the two groups is not maintained. They are confused often enough to cause Tuan and Wang to join them in one great category (the latter only the *-ng* words). When Shī (Lie wen) rimes 邦 *pāng: 崇 tɕ'jung* and Yi king frequently rimes 邦 *pāng: 中 tɕung*, then Li's Arch. values: *pāng: tɕ'jung*, *pāng: tɕung* are not very convincing.

In the second place it might be argued that it goes against the testimony of the ancient dialects. When I proposed, in my Shī king Researches, that Anc. 工

-ung, 谷 -uk and 宮 -iung, 菊 -iuk derived from Arch. -ong, -ok, -iung, -iok, (ung < ong accepted by Li), it was because I could show that even in Ts'ie yün time there were considerable dialects which had an *o* vocalism. Now, that is true not only of -uk (谷, Li Arch. -ok) but also of -iuk (菊, Li Arch. -iuk), which has *o* regularly in Go-on (see Shī king Researches p. 127): Ts'ie yün *kjuk*, *tš'juk*, *ljuk*, *sjuk*, *pjuk*, *mjuk* = Go-on *koku*, *soku*, *roku*, *soku*, *poku*, *moku*, and after labials also in Kan-on and Sino-Corean: Ts'ie yün *mjuk* = Kan-on *boku*, Cor. *mok*. And even more serious: the Ts'ie yün rime 冬, which would have been Arch. -ung according to Li, has perfectly regularly -ong in Sino-Corean and -ou in both Kan-on and Go-on! If we conclude Arch. -ong, -ok for 公, 谷, Ts'ie yün -ung, -uk, because sister dialects of the Ts'ie yün language had *o*, we seem forced to pose an Arch. -o also for 冬 (Ts'ie yün -uong), which shows exactly the same phenomenon. This objection, however, is not very fatal, for, as we shall see, I was wrong in surmising Arch. 工 -ong, 谷 -ok for Ts'ie yün -ung, -uk (I shall revert to that presently); indeed, the various Sui time dialects had a most variable pattern answering to these finals in Arch. Chinese, and it is dangerous to draw far-reaching conclusions from them.

In the third place there is an objection which is much more serious. There are certain Arch. rimes which are irreconcilable with Li's interpretation. There crop up, here and there, some freer rimes due to *licentia poetica*, contacts between different rime categories, and these are often very telling. When we find in Shī (Lie wen) 崇 Anc. *dž'iung*: 皇 *γwáng*; in Yi king (ken) 躬 *kjüng*: 正 *tšjäng*: 終 *tšjüng*; in Ch'u ts'i (Kiu chang) 中 *tjüng*: 窮 *g'iung*: 行 *γwng* (< *g'äng*), and so on, then we can safely say that Arch. -iung for Anc. *jüng* is absolutely excluded. A make-shift rime -ong: *äng*, an -ong: *äng*, an -ong: *äng* might pass, but not an -ung: *äng*, an -ung: *äng*, an -ung: *äng*. No, Anc. -iung was undoubtedly Arch. -iung of some kind; and that Anc. -uong had some kind of *o* is indisputable.

How, then, are we to explain the two sub-categories, since my earlier reconstruction obviously fails (see p. 37 above) to account for them? I think we had better start our investigation not from the -ng words but from the -k and -g words; for here, as in the -ang category, it turns out that the -ng words are less fully represented in all the possible combinations than the -k and -g words. Let us draw a table of type words, representing the various Anc. finals which fall in the three (for the -ng words only two) categories of the Shī king, which tally very well (it is highly important to observe this) with the distinctions in the hie sheng characters. I arrange them in a peculiar way with a view to the following discussion.



| I    |      | II   |      | III  |      |
|------|------|------|------|------|------|
| 1 學  | 2 包  | 11 樂 | 12 〇 | 23 角 | 24 穀 |
| 3 酷  | 4 老  | 13 較 | 14 郊 | 25 谷 | 26 瞽 |
| 5 旬  | 6 休  | 15 沃 | 16 高 | 27 曲 | 28 仆 |
| 7 〇  | 8 陶  | 17 藿 | 18 鈇 |      |      |
| 9 威  | 10 蕭 | 19 虐 | 20 廟 |      |      |
|      |      | 21 的 | 22 苕 |      |      |
| 29 降 |      |      |      | 32 江 |      |
| 30 冬 |      |      |      | 33 工 |      |
| 31 宮 |      |      |      | 34 恭 |      |

(24, 26 and 28 are erroneously placed by Tuan in other categories; their phonetics prove them to belong to our cat. III here).

The Anc. values of these type-words were:

| I               |                | II             |                | III              |               |
|-----------------|----------------|----------------|----------------|------------------|---------------|
|                 |                | 11. <i>ák</i>  | 12. 〇          |                  |               |
| 1. <i>ák</i>    | 2. <i>au</i>   | 13. <i>ák</i>  | 14. <i>au</i>  | 23. <i>ák</i>    | 24. <i>zu</i> |
| 3. <i>uok</i>   | 4. <i>áu</i>   | 15. <i>uok</i> | 16. <i>áu</i>  | 25. <i>uk</i>    | 26. <i>zu</i> |
| 5. <i>ɿuk</i>   | 6. <i>ɿəu</i>  | 17. <i>ɿuk</i> | 18. <i>ɿwo</i> | 27. <i>ɿwok</i>  | 28. <i>ɿu</i> |
| 7. 〇            | 8. <i>ɿäü</i>  | 19. <i>ɿak</i> | 20. <i>ɿäü</i> |                  |               |
| 9. <i>iek</i>   | 10. <i>ieu</i> | 21. <i>iek</i> | 22. <i>ieu</i> |                  |               |
| 29. <i>äng</i>  |                |                |                | 32. <i>äng</i>   |               |
| 30. <i>uong</i> |                |                |                | 33. <i>ung</i>   |               |
| 31. <i>ɿung</i> |                |                |                | 34. <i>ɿwong</i> |               |

I have placed the *-k* and *-u* words abreast in the way hie sheng characters with double readings show them to belong together. There is e. g. 覺 read both *kák* (1) and *kau* (2); 告 read both *kuok* (3) and *käu* (4); 祝 read *tɿɿuk* (5) and *tɿɿəu* (6) — and so on.

Cat. I is Wang Nien-sun's cat. 21, II his cat. 20 and III his cat. 19 (ju sheng). There are a considerable number of rime contacts between the three categories; and in my Shī king Researches I even called in question the correctness of distinguishing I and II. Prolonged deliberation has convinced me that after all it is necessary to accept such a distinction. It is necessary to keep apart I and II, insignificant though the difference must have been, not only because of the rimes in the Shī and other classics, which in spite of numerous contacts on the whole must be

said to keep these classes apart from each other; it is also and above all because the very same three-class distinctions are clearly discernible in the hie sheng characters, an extremely interesting and important fact. Li Fang-kuei has brought out this in a very meritorious way.<sup>1)</sup>

So far, therefore, he has convinced me. But his reconstruction scheme suffers from such great faults that it is entirely unacceptable. In order to get a different principal vowel in the three categories he introduces, *besides* the ordinary *o* and the open *â*, which is »half-way between» *o* and *â* (as in Engl. *all*), still a third open *o* sound, written *ω* »half-way between» *â* and *â*! This is of course phonetically extremely unnatural and impossible. Still more unnatural is the way in which Li has worked out this idea:

| I                                |                                | II                             |                                | III                               |       |
|----------------------------------|--------------------------------|--------------------------------|--------------------------------|-----------------------------------|-------|
|                                  |                                | 11. <i>ωk</i> (> <i>âk</i> )   | 12. <i>○</i>                   |                                   |       |
| 1. ?                             | 2. <i>og</i> (> <i>au</i> )    | 13. <i>âk</i> (> <i>âk</i> )   | 14. <i>âg</i> (> <i>au</i> )   | 23. <i>âk</i> (> <i>âk</i> )      | 24. ? |
| 3. <i>uk</i> (> <i>uok</i> )     | 4. <i>ug</i> (> <i>âu</i> )    | 15. <i>ωok</i> (> <i>uok</i> ) | 16. <i>ωg</i> (> <i>âu</i> )   | 25. <i>ok</i> (> <i>uk</i> )      | 26. ? |
| 5. <i>ïuk</i> (> <i>ïuk</i> )    | 6. <i>ïug</i> (> <i>ïæu</i> )  | 17. ?                          | 18. ?                          | 27. <i>ïok</i> (> <i>ïwok</i> )   | 28. ? |
| 7. <i>○</i>                      | 8. ?                           | 19. <i>ïwk</i> (> <i>ïak</i> ) | 20. <i>ïwg</i> (> <i>ïäu</i> ) |                                   |       |
| 9. <i>iuk</i> (> <i>iek</i> )    | 10. <i>iug</i> (> <i>ieu</i> ) | 21. <i>iwk</i> (> <i>iek</i> ) | 22. <i>iwg</i> (> <i>ieu</i> ) |                                   |       |
| 29. ?                            |                                |                                |                                | 32. <i>âng</i> (> <i>âng</i> )    |       |
| 30. <i>ung</i> (> <i>uong</i> )  |                                |                                |                                | 33. <i>ong</i> (> <i>ung</i> )    |       |
| 31. <i>ïung</i> (> <i>ïung</i> ) |                                |                                |                                | 34. <i>ïong</i> (> <i>ïwong</i> ) |       |

We can see at a glance how unsatisfactory all this is:

1) Can anyone seriously believe that such different Arch. values as those in Li's cat. I (nearly all with a *u* vocalism) could give in nearly every detail the same Anc. results as those in cat. II (nearly all with a vowel more open than *â*, practically an *â*)?

2) What about all the empty spaces, in particular 1, 24, 26, 28, 29 (8, 17, 18 are of little consequence, as we shall see presently)? How will it be possible, under Li's system, to fill in logically any Arch. values in them? Li has wisely abs-

<sup>1)</sup> There would seem to be an important exception to this rule. The Anc. *âu*, *au*, *ïäu*, *ieu*, *ïæu* of categories I and II interchange, in the hie sheng characters, *not only* with Anc. *uok*, *ïuk*, which they should do, in accordance with the Shī rime system of the table above, but also in some cases with Anc. *-uk* (III), which they should not, see my Shī king Researches p. 152 (table). But this is not so bad as it would seem. Against an overwhelming number of contacts with Anc. *uok*, *ïuk*, there are, in the table, only 6 cases of contact with *uk*; 5 of these are *puk*, *p'uk*, *muk* — evidently the labial initial has here confused an earlier *puok* or such-like. Moreover, of the 6 cases only 2 are characters existing in Han time or earlier. So the general rule is very safe.

tained from saying anything about them at all. And yet these words (and many others for which they serve as type words) clearly belong to these categories. If, with Tuan Yü-ts'ai, Li would place 26 and 28 not in III but in I, he would jump from the frying-pan into the fire; it would make it still more impossible for him to find separate Arch. values for these word types. His system here breaks down entirely.

3) If II had a vowel intermediate between *ä* and *á*, how is it possible that II does not interchange frequently with words of type 作 Arch. *tsák* etc. (Tuan's cat. 5) and with cat. III (*ák* according to Li) but does so, in numerous cases of contact between I and II, with *-u-* words? That is perfectly inexplicable.

4) Why do not 13. »ák», 14 »ág» rime with 23 »ák»?

All this is plainly impossible. We shall have to find ways of approach quite different from those of Li.

Let us start with rime cat. III, and acknowledge at once a fundamental fault committed in Shī king Researches: the endeavour to elucidate it by aid of such late dialects as Sino-Japanese and Sino-Corean. My conclusion that Anc. 25. *kuk* was Arch. *kok* was devoid of value. Leaving apart, for the moment, 24, 26, 28 and concentrating upon the principal types: 23, 25, 27, Anc. *ák*, *uk*, *iwok*, which, as vindicated by K'ung Kuang-sen and Kiang Yu-kao, form a rime category distinguished from I and II, we shall have to judge them in the light of Arch. Chinese itself. There are two salient facts to be taken into account:

1) Whereas the *ák*, *uok*, *iwok* of I and II have frequent connections, in rimes and hie sheng, with words of types Anc. *ák*, *jak*, *iek*, *äu*, *ieu*, words which obviously all had k'ai k'ou, the *ák*, *uk*, *iwok* of III have no such connections (yet see note on p. 40).

2) In irregular rimes, III very often (but I and II never) mixes with Tuan's cat. 4, which quite certainly was Arch. *-u*, *-iu* (see Shī king Researches p. 145). Examples:

1 驅績穀 2 奏保 3 木附屬 4 谷穀垢 5 屬貝 6 谷附漏

1. (Shī, Siao jung) Anc. *k'iu*: *ziwok*: *kuk*; 2. (Shī, Ch'u ts'i) Anc. *tsu* (< *tsu*): *luk*; 3. (Shī, Küe kung) *muk*: *b'iu*: *ziwok*; 4. (Shī, Sang jou) *kuk*: *kuk*: *k<sub>2</sub>u* (< *ku*); 5. (Li sao) *ziwok*: *g'iu*; 6. (Yi king, *tsing*) *kuk*: *b'iu*: *l<sub>2</sub>u* (< *lu*).

Indeed, this phenomenon is so marked that Wang Nien-sun has placed our cat. III (Anc. *ák*, *uk*, *iwok*) as the ju sheng correspondence to Anc. *zu*, *iu* (Arch. *u*, *iu*).

These two facts remove all doubt about the Arch. values of types 25. 谷 Anc. *kuk*. 27. 曲 *k'iwok*. They were not, as I supposed in Shi king researches, *ok*, *iwok*; nor were they, as Li supposes, *ok*, *ïok*. They were clearly ho k'ou words: 25 *uk*, 27. *ïuk*. Therefore makeshift rimes were possible such as those in the table p. 41 above: Arch. 1. *k'ïu:: dzïuk: kuk*; 2. *tsu: luk*; 3. *muk: b'ïu: dïuk*; 4. *kuk: kuk: ku*; 5. *dïuk: g'ïu::*; 6. *kuk: b'ïu: lu*. (With Li's system: 1. *k'ïu: dzïok: kok*; 2. *tsu: lok* etc. would be quite inexplicable).

The Arch. *-uk* was preserved in the Ts'ie yün dialect, but in other ancient dialects it was broken into *uok* (S.-Jap. spells 屋 *woku*, 翁 *wou*); *ïuk* was broken into *iwok*. Yet in the corresponding *-ng* words the Arch. 34. *-ïung* peeps through in the oldest Anc. dialect we know of, the Wu dialect, which was the base of Go-on. We find (Karlgren, Phonol. Chin. p. 853) Ts'ie yün *kïwong*, *g'ïwong*, *'ïwong*, *îwong*, *lïwong*, *sïwong* etc. = Go-on *ku*, *gu*, *iu*, *çu*, *riu*, *šu* etc.

So far all is plain sailing. But type 23. Anc. *âk* seems to form a serious obstacle. If 25. was Arch. *uk* and 27. *ïuk*, what was this 23. *âk*?

It is obvious that *âk* III (23) had a different Arch. origin from *âk* I (1) and *âk* II (13), since none of the three types rimes with any of the others. *âk* III (23), which corresponds to the Arch. *-g* word 24. Anc. *-zu*, whereas *âk* I (1) and *âk* II (13) correspond to 2, 14 Anc. *au*, evidently had a *darker* vowel than the others. Since it rimes with 25. Arch. *uk* and 27. Arch. *ïuk* and constantly interchanges with them in the hie sheng, it must have been some kind of *u*. But what was the difference? I think the secret lies in the *quantity*.

H. Maspero was the first to emphasize the great and fundamental difference between long-vowelled (tense-vowelled) and short-vowelled (slack-vowelled) syllables in Anc. (and of course in Arch.) Chinese. This was a fecund idea, and it has enabled us to solve a long series of riddles. There was this contrast in nearly every Arch. category. There were *ang: äng; iang: iäng; an: än; ian: iän; ien: iën; ieng: iëng; am: äm; iam: iäm*. If we examine the short-vowelled rimes in the *a*-groups, we find that when having medial *ï* they existed only after gutturals (with laryngals) and labials, but not after palatals and dentals: Anc. types *kïm*, *kïwom*, *pïwom*; *kïwng*, *kïwong*, *pïwong* etc.; furthermore that when they had no medial *ï*, they existed after the said gutturals and labials, and besides that, in some cases, after *î*, *d*, *t*<sub>s</sub>, *t*<sub>s</sub>', *d*<sub>z</sub>', but not after *l*, *t*, *t*', *d*', *t*<sub>s</sub>, *t*<sub>s</sub>', *d*<sub>z</sub>', *s*: types *kam*, *puwom*, *son*. Here, in our present categories I, II and III, we find that the three Anc. *âk* types (1, 13, 23) had exactly this peculiarity: they existed principally after gutturals and labials (*kâk*, *pâk*) and in a few cases like 提 *tâk* etc. Similarly the two

Anc. *ang* types 29, 32, were *kang*, *pang* and an occasional 雙 *šang* etc. I conclude that the types 1, 13, 23, 29, 32 belonged to this class of short-vowelled syllables, and this gives us the key to various distinctions in our tables I, II and III which otherwise would be inexplicable. If we revert, first, to cat. III, we can now fill in the Arch. values:

23. Arch. *ũk* > *øk* > Anc. *ǎk*; 25. Arch. *uk* > Anc. *uk*; 27. Arch. *ɿuk* > Anc. *ɿwok*;  
And, in the corresponding -*g* series:

24. Arch. *ũg* > *u* > Anc. *ɻu* (just as 句 Arch. *ku* > Anc. *kɻu*); 26. Arch. *ug* > *u* > Anc. *ɻu*; 28. Arch. *ɿug* > Anc. *ɿu*.

In the -*ng* series:

32. Arch. *ũng* > *ong* > Anc. *ang*; 33. Arch. *ung* > Anc. *ung*; 34. Arch. *ɿung* > Anc. *ɿwong*.

And here we obtain quite unexpectedly the solution of the riddle that puzzled us in the *ə* category above (p. 36). In that Arch. category:

|             |             |             |
|-------------|-------------|-------------|
| <i>əng</i>  | <i>wəng</i> | ○           |
| <i>ɿəng</i> | —           | <i>ɿung</i> |
| <i>ək</i>   | <i>wək</i>  | ○           |
| <i>ɿək</i>  | <i>ɿwək</i> | <i>ɿuk</i>  |
| <i>əg</i>   | <i>wəg</i>  | ○           |
| <i>ɿəg</i>  | <i>ɿwəg</i> | <i>ɿug</i>  |

we had *ɿung*, *ɿuk*, *ɿug*, but, strange to say, no *ung*, *uk*, *ug*.

In the present category:

|                                    |                                       |
|------------------------------------|---------------------------------------|
| <i>ũng</i> , <i>ũk</i> , <i>ũg</i> | ○ ○ ○                                 |
| <i>ung</i> , <i>uk</i> , <i>ug</i> | <i>ɿung</i> , <i>ɿuk</i> , <i>ɿug</i> |

we have *ũng*, *ũk*, *ũg* but no *ɿũg*, *ɿũk*, *ɿũg*! When we find that in the *ə* category the 弓 *ɿung* 囿 *ɿuk*, 久 *ɿug* existed only after gutturals (laryngals) and labials, types *kɿung*, *kɿuk*, *pɿuk*, *kɿug*, *pɿug*, but after no other initials, and thus clearly agreed with the short-vowelled types in the *a*-groups (*kǎn*, *kɿwǎn*, *pɿwǎn* but no other initials), we can see at a glance that the 弓, 囿, 久 in the *ə* category are the very types (short-vowelled): *ɿũng*, *ɿũk*, *ɿũg* which are missing in our cat. III here.

Why, then, should they rime, not with *ũng*, *ũk*, *ũg* in our cat. III here but with the *əng*, *ək*, *əg* in the *ə* category? It stands to reason that the short *ũ* must have been modified, when preceded by an *ɿ*, so as to make the sound less labial and less

velar than in *üng*, *ük*, *üg*. It must have been something similar to the Swedish *u* in *kung* or the English *u* in *value*. This, indeed, stands genetically and acoustically fairly close to *a*, and we easily understand that in rimes and hie sheng it goes together rather with *a* than with a narrowly labialized and strongly velar *ü* and *u*. This once said, and this peculiarity in script and rimes nicely explained, we can be satisfied to write it, etymologically correct, 弓 *kjüng*, 囿 *giük*, 久 *kjüg*, keeping in mind that the *ü* in these syllable types had a different and more open *timbre* than the *ü* in types *küng*, *kük*, *küg*.

Let us now take up for examination the intricate categories I and II on p. 39 above. If we look at their Anc. values, there is an almost shocking similarity. It would seem to be absolutely futile to endeavour to find a difference in quality of the principal vowel for these two Arch. categories. And yet such a difference must have existed, since they are distinguished fairly clearly as rime categories — with numerous confusions, it is true. And we have necessarily to solve the riddle.

In the first place we shall somewhat reduce the apparent similarity of the two categories. The table on p. 39 above is correct, yet it is somewhat misleading. For all the types there given are not equally normal and frequent. The normal types in cat. I are 1, 2, 3, 4, 5, 6, 9, 10; the type 8. *jäu* is hardly existent. It is represented by the word 陶 Anc. *jäu* in some rimes. Moreover, Tuan brings in 𪛗 *g'jäu* and 椒 *tsjäu* in our cat. I, because of their phonetics, but in Shī they only rime with each other once and with no other words, so we cannot know exactly whether they belong in I or in II. Among the words with Anc. *jäu* in the Ts'ie yün the great majority are obviously words of cat. II, having phonetics belonging to that category; a few words have phonetics belonging to cat. I, but that does not necessarily place those words in the Arch. cat. I, for these characters may be due to contact between the (undoubtedly very similar) categories I and II in the hie sheng. Altogether it can be said that the Anc. *jäu*, regular and frequent in cat. II, as a rule does not exist in cat. I, just as *jeu* (I, 6), regular and frequent in cat. I, does not exist at all in cat. II. Here, then, is a strong and real difference between I and II.

In cat. II the normal types are 11, 13, 14, 15, 16, 19, 20, 21, 22. Types 17 and 18 are represented each only by an isolated word, and these we must disregard, since they cannot be built upon. They may be due to some special conditions in individual cases. We may therefore reduce somewhat our scheme of the normal type words of our three categories, and rewrite it thus:

| I    |     |  |  | II   |      |      |      | III |  |  |  |
|------|-----|--|--|------|------|------|------|-----|--|--|--|
|      |     |  |  | 9 樂  | 10 〇 | 19 月 | 20 穀 |     |  |  |  |
| 1 學  | 2 包 |  |  | 11 較 | 12 郊 | 21 谷 | 23 替 |     |  |  |  |
| 3 酷  | 4 老 |  |  | 13 沃 | 14 高 | 23 曲 | 24 仆 |     |  |  |  |
| 5 菊  | 6 休 |  |  | 15 虐 | 16 廟 |      |      |     |  |  |  |
| 7 威  | 8 蕭 |  |  | 17 的 | 18 惹 |      |      |     |  |  |  |
| 25 降 |     |  |  |      |      | 28 江 |      |     |  |  |  |
| 26 冬 |     |  |  |      |      | 29 工 |      |     |  |  |  |
| 27 宮 |     |  |  |      |      | 30 恭 |      |     |  |  |  |

In Anc. Chinese:

| I               |               |  |  | II             |                |                 |               | III |  |  |  |
|-----------------|---------------|--|--|----------------|----------------|-----------------|---------------|-----|--|--|--|
|                 |               |  |  | 9. <i>āk</i>   | 10. 〇          |                 |               |     |  |  |  |
| 1. <i>āk</i>    | 2. <i>au</i>  |  |  | 11. <i>āk</i>  | 12. <i>au</i>  | 19. <i>āk</i>   | 20. <i>zu</i> |     |  |  |  |
| 3. <i>uok</i>   | 4. <i>āu</i>  |  |  | 13. <i>uok</i> | 14. <i>āu</i>  | 21. <i>uk</i>   | 22. <i>zu</i> |     |  |  |  |
| 5. <i>ɿuk</i>   | 6. <i>ɿəu</i> |  |  | 15. <i>ɿak</i> | 16. <i>ɿäu</i> | 23. <i>ɿwok</i> | 24. <i>ɿu</i> |     |  |  |  |
| 7. <i>iek</i>   | 8. <i>ieu</i> |  |  | 17. <i>iek</i> | 18. <i>ieu</i> |                 |               |     |  |  |  |
| 25. <i>äng</i>  |               |  |  |                |                | 28. <i>äng</i>  |               |     |  |  |  |
| 26. <i>uog</i>  |               |  |  |                |                | 29. <i>ung</i>  |               |     |  |  |  |
| 27. <i>ɿung</i> |               |  |  |                |                | 30. <i>ɿwog</i> |               |     |  |  |  |

Since cat. III had *u*, I and II cannot possibly have had *u*. And since *ək*, *ek*, *āk*, *ak*, *ek* are to be found in other Shī king rime categories, neatly distinguished from our categories I and II here, I maintain what I said in my Shī king Researches, against Li Fang-kuei's proposals: these two categories had some kind of *o* for principal vowels. But Li is surely right in saying that II must have had a more open principal vowel than I. This gives us closed *o*: *ô* for I, open *o*: *o* and *ā* for II. And then we have to apply the distinction we have already determined between long-vowelled and short-vowelled syllables: *ō* as against *o*, *ô* as against *ô* (for typographical reasons, in order to avoid an ugly *ô*, I write the short *ô* thus: *ô*). And we are finally able to fill in our scheme with Archaic values which will nicely explain both the distinction between the three categories in rimes and hie sheng, and the considerable number of exceptional contacts between them, equally in rimes as well as in hie sheng. Observe that the *-ng* group is much poorer than the *-k* and *-g* groups. It has fewer forms with medial *ɿ*, and it has forms corresponding only to I and III, not to II. Whether the latter is due to confusion of

two primarily different groups it is impossible to tell; we can merely state that neither Shī rimes nor hie sheng indicate a distinction here similar to that in the *-k* and *-g* words.

| I                                |                               | II                             |                                | III                               |                               |
|----------------------------------|-------------------------------|--------------------------------|--------------------------------|-----------------------------------|-------------------------------|
|                                  |                               | 9. <i>dk</i> (▷ <i>ák</i> )    | 10. <i>o</i>                   |                                   |                               |
| 1. <i>ók</i> (▷ <i>ák</i> )      | 2. <i>óg</i> (▷ <i>au</i> )   | 11. <i>ók</i> (▷ <i>ák</i> )   | 12. <i>óg</i> (▷ <i>au</i> )   | 19. <i>úk</i> (▷ <i>ák</i> )      | 20. <i>üg</i> (▷ <i>zu</i> )  |
| 3. <i>ók</i> (▷ <i>uók</i> )     | 4. <i>óg</i> (▷ <i>áu</i> )   | 13. <i>ók</i> (▷ <i>uók</i> )  | 14. <i>og</i> (▷ <i>áu</i> )   | 21. <i>uk</i> (▷ <i>uk</i> )      | 22. <i>ug</i> (▷ <i>zu</i> )  |
| 5. <i>íók</i> (▷ <i>íuk</i> )    | 6. <i>íóg</i> (▷ <i>ízu</i> ) | 15. <i>íók</i> (▷ <i>íák</i> ) | 16. <i>íog</i> (▷ <i>íäu</i> ) | 23. <i>íuk</i> (▷ <i>íwók</i> )   | 24. <i>íug</i> (▷ <i>íu</i> ) |
| 7. <i>íók</i> (▷ <i>iek</i> )    | 8. <i>íóg</i> (▷ <i>ieu</i> ) | 17. <i>íók</i> (▷ <i>iek</i> ) | 18. <i>íog</i> (▷ <i>ieu</i> ) |                                   |                               |
| 25. <i>óng</i> (▷ <i>áng</i> )   |                               |                                |                                | 28. <i>ung</i> (▷ <i>áng</i> )    |                               |
| 26. <i>óng</i> (▷ <i>uong</i> )  |                               |                                |                                | 29. <i>ung</i> (▷ <i>ung</i> )    |                               |
| 27. <i>íóng</i> (▷ <i>íung</i> ) |                               |                                |                                | 30. <i>íung</i> (▷ <i>íwong</i> ) |                               |

There is one more group with guttural finals which needs a few words of elucidation. Tuan's cat. 11, Wang's cat. 6 contains words with Anc. *eng*, *jäng*, *ieng*,<sup>1)</sup> and since it never rimes with the *ang*, *iang*, *äng*, *jäng* etc. of Tuan's cat. 10, we can see that the palatal vowel was Archaic. To this *-ng* category correspond as *-k* and *-g* words Tuan's cat. 16, Wang's cat. 11, with Anc. *-iɛ*, *iei*, *ai*, *iwei*. The *iɛ* of this category should be well distinguished from the *iɛ* (< *ia*) of Tuan's cat. 17, e. g. 何 Anc. *γá*, 遇 *kuá* (< *kwá*), 皮 *b'jiɛ* (< *b'ia*), 爲 *juiɛ* (> *guia*), 加 *ka*, which had *-a* (open syllable) in Arch. Chinese. The *-iɛ* in cat. 16. is the *-g* correspondence to Anc. *-jäng*.

In Shī king Researches (p. 157) I stated that the Anc. *-eng*, *-ek* rimes: 耕 *keng*, 革 *kek* etc., rime, in the Shī, the former in the *e* group, i. e. with *-jäng*, *-ieng*, the latter in the *ə* group, i. e. with *-ək*, *-əg*. This is true, but not the whole truth. Anc. *eng* (*ek*) contains characters of two quite different Arch. origins. One of them, with an open, slack *ä* sound: Arch. *-eng*, *-ek*, rimes with the neutral slack *ə*: *əng*, *ək*; the other, which in Anc. Chinese coincided with the open *ε* (since 耕 *eng*: 清 *jäng*: 青 *ieng* are different rimes in the Ts'ie yün) must have been another kind of *ä* or *e* in Arch. Chinese. On the analogy of cat. B above (pp. 3, 6), where we have Arch. *iēn*: *ien* as rimes, I conclude in our present category that the three principal endings were *əng*: *ǐəng*: *ieng*, and I obtain the following scheme:

<sup>1)</sup> The series 生 Anc. *šəng* should be expected to be Arch. *säng* and rime in the *-ang* category. But it rimes quite regularly in the *äng-eng* group, which shows that an Arch. *əng* here has irregularly passed over to the Anc. *əng* rime.



Archaic  $\varepsilon$  class, riming in the  $-ang$ ,  $-ak$  category:

1 橙 2 革 3 戒  
4 宏 5 妄 6 徑

- |  |  |  |
|--|--|--|
| 1. $\varepsilon ng$ ( $\rightarrow \varepsilon ng$ )                 | 2. $\varepsilon k$ ( $\rightarrow \varepsilon k$ )                 | 3. $\varepsilon g$ ( $\rightarrow ai$ )          |
| 4. $w\acute{\varepsilon}ng$ ( $\rightarrow w\acute{\varepsilon}ng$ ) | 5. $w\acute{\varepsilon}k$ ( $\rightarrow w\acute{\varepsilon}k$ ) | 6. $w\acute{\varepsilon}g$ ( $\rightarrow wai$ ) |

Archaic  $e$  and  $\check{e}$  class, forming Tuan's categories 11 and 16:

1 耕 2 危 3 解  
4 嶺 5 割 6 挂  
7 清 8 易 9 知  
10 慈 11 〇 12 〇  
13 青 14 錫 15 提  
16 局 17 昊 18 圭

- |   |  |  |
|---|--|--|
| 1. $\check{e}ng$ ( $\rightarrow \varepsilon ng$ )                   | 2. $\check{e}k$ ( $\rightarrow \varepsilon k$ )                | 3. $\check{e}g$ ( $\rightarrow ai$ )                       |
| 4. $w\check{e}ng$ ( $\rightarrow w\acute{\varepsilon}ng$ )          | 5. $w\check{e}k$ ( $\rightarrow w\acute{\varepsilon}k$ )       | 6. $w\check{e}g$ ( $\rightarrow wai$ )                     |
| 7. $\check{i}\check{e}ng$ ( $\rightarrow \check{i}\check{a}ng$ )    | 8. $\check{i}\check{e}k$ ( $\rightarrow \check{i}\check{a}k$ ) | 9. $\check{i}\check{e}g$ ( $\rightarrow ia > i\check{e}$ ) |
| 10. $\check{i}w\check{e}ng$ ( $\rightarrow \check{i}w\check{a}ng$ ) | 11. 〇  | 12. 〇  |
| 13. $i\acute{e}ng$ ( $\rightarrow i\acute{e}ng$ )                   | 14. $i\acute{e}k$ ( $\rightarrow i\acute{e}k$ )                | 15. $i\acute{e}g$ ( $\rightarrow iei$ )                    |
| 16. $iw\acute{e}ng$ ( $\rightarrow iw\acute{e}ng$ )                 | 17. $iw\acute{e}k$ ( $\rightarrow iw\acute{e}k$ )              | 18. $iw\acute{e}g$ ( $\rightarrow iwei$ )                  |

For 3.  $\check{e}g > \check{e}i > ai$  cf. German  $ei > ai$ . The transition  $\check{i}\check{e}g > ia$  must have taken place quite early, for the Anc.  $i\check{e} < Arch. \check{i}\check{e}g$  (our present cat., Tuan 16) and the Anc.  $i\check{e} < Arch. ia$  (Tuan cat. 17), which are neatly distinguished in the Shī king, rime quite freely already in Lao-tsī and Chuang-tsī.

\*     \*     \*

It might seem bold to reconstruct in its petty details Archaic Chinese, a language of some 2500 years ago, by aid exclusively of internal evidence, without comparative Sinitic materials, nay, on some points even seemingly against the evidence of e. g. Siamese (cf. p. 30 above). It must be observed, however, that in certain important respects we are much better situated for such a reconstruction than the scholar who has to reconstruct an earlier stage of a language exclusively by aid of divergent but *later* materials. The example adduced on p. 30 above: *steinn, Stein, sten, stone: stainaz* is very instructive as to the dangers the latter runs.

There may be important features in the early language which the late materials never reveal. Our position is very much more favourable in as far as we have sources for Arch. Chinese dating back to the very period of the language (say roughly 1000—600 B. C.), sources which give no concrete sound values, it is true, but which give so to speak the *frame* to be filled out, the *phonological categories* which need only be interpreted. And the value of these early sources is enhanced enormously by the fact that they are of two kinds absolutely independent of each other: the Shī rimes and the hie sheng characters. By a very lucky chance these two sources throw light upon a practically identical language. On a few points, it is true, the hie sheng reveal a slightly older stage of the language (see p. 32 above). But in most categories the accord is astoundingly good: the same distinctions, the same division of words into phonological groups can be observed in both sources. It is evident that the Shī king odes were given their final form and the standard set of hie sheng (originally *kia tsie*) were invented in one and the same centre, presumably the Chou court, and that dialectal aberrations were allowed to appear in the rimes and in the script only in sporadic cases.

There is, however, one great deficiency to be pointed out. If we are favourably placed, thanks to the double sources, for the reconstruction of the Arch. vowels and the final consonants, we are greatly handicapped when it comes to the initials, by our having recourse here only to *one* set of materials, the hie sheng; here, of course, the poetry fails us entirely. It is true that the hie sheng have made it possible on many important points to discern Arch. initials very different from the Anc. ones (*g*' > *γ*, *ā* > *á*, *í* > *íá*, *t* > *tá*, *s* | *a* > *ša*, *gi* > *ji*, *dí* > *í* etc., see my Analytic Dictionary); but many differences between the Arch. and the Anc. initial system, which do not happen to be revealed by this single source, the hie sheng, are sure to have escaped us. In particular I am afraid that many *consonant groups* may have existed where we can only discern single consonants. The possibility of such *x*'s in our equations, which can only be filled out in future by Sinitic comparisons, must never be forgotten. To a certain extent they will make the following investigation less reliable than it would appear at first sight. In spite of this we have to attempt it, confident that though a revision may be necessary on isolated points, the system as a whole must be fairly reliable.

There is one point regarding initial consonant groups on which I wish to say a few words. When we have the well-known alternation *k*-: *l*- and *p*-: *l*- in the hie sheng, e. g. 各 Anc. *kák*: 洛 *lák*, 變 *pān*: 緝 *līwān*, it might seem dubious

whether the consonant group existed in the *k* (*p*) member or in the *l* member or in both members. Thus three interpretations seem *a priori* possible:

A. 各 *klák*: 洛 *lák*; B. 各 *kák*: 洛 *klák* (*glák*); C. 各 *klák*: 洛 *glák*.

There is, of course, no fixed rule to be expected for this, for not all hie sheng characters may have been built on exactly the same principles. But in many cases there is one of these three alternatives which is decidedly the most plausible: the alternative C.

Alt. A. is excluded in several examples where we can build on reliable testimonies. There is, first, the case 藍 Anc. *lám* 'indigo', often discussed earlier. Here we have, fortunately, double *points d'appui*, which fact admits of a definite conclusion. When on the one hand we have 監 Anc. *kam* as phonetic, on the other hand Siamese *k'ram* 'indigo' < older *gram*, then the Arch. guttural before *lám* is certain: Arch. *glám* 'indigo'. Again, there is an interesting case in which the guttural before *l* can be shown to have lived down to early Han time, which Prof. G. Morgenstierne has pointed out to me. The city Lou-lan at Lop-nor, first found and excavated by Sven Hedin, was called 樓蘭 already in Chang K'ien's travel report (2d c. B. C.), and this transcription of the foreign word must be approximately of that age. The *lou* has the same phonetic as 婁 *g'iu*, revealing a guttural, and the city is called *Kroraimna* in Kharoshti documents (Stein, *Serindia* p. 41 a). So *l<sub>2</sub>u* was Han *glu*. In both these examples the alt. A. is excluded.

H. Maspero (Le dialecte de Tch'ang-ngan sous les T'ang) has identified 變 *piän* (phon. *l<sub>2</sub>wän*) with Siamese *pien*. If this is right, which seems probable, then this is a case where alt. B. is excluded. And here again we can find a trace of a *kl*- in the Anc. *k*- member (各 *kák*) even down in Han time. 各 *kák* has as homophone 閣 *kák*. 各 serves as phonetic in 洛 *glák* (with the *g*- restituted according to what was said of alt. A. above). Was 閣 Arch. *kák* or *klák*? It occurs in Shī king, Sī kan, in a phrase 約之閣閣 where *kák* 'chamber' gives no sense. Mao Heng (middle of 2nd c. B. C.) explains it by a method often resorted to by early commentators. He considers it as a *kia tsie* for another word with a similar sound, and says «*kák kák* is equal to 歷歷 *liek liek*.» This phonetic gloss, impossible and meaningless if 閣 were an Arch. *kák*, is comprehensible if it was an Arch. *klák*: «*klák-klák* is equal to *liek-liek* (such a measure of phonetic dissimilarity occurs sometimes in the *kia tsie*). This decidedly speaks in favour of alt. C, and therefore we obtain 各 *klák*: 洛 *glák* etc.

Even if we can obtain a definite answer in this case, and if it seems probable that there are many analogous cases, we must not, on the other hand, generalize too

rigidly and conclude that it was always so; there is of course no guarantee that the hie sheng creators did not apply sometimes the A type and sometimes the B type just as well as the C type.

\* \* \*

We are now, finally, going to dress a series of tables of words which can be suspected of being cognate, i. e. of forming word families. In order to be cautious at the start, I shall keep within certain fairly narrow limits in the present paper. In the first place I leave out entirely words which consist of only *two* elements, an initial and a vowel (or diphthong). A comparison of words like *ku: ko, pā: pia* etc. is very risky, because the word bodies are too short. There is infinitely greater chance of hitting the truth in words with *three* elements: initial, vowel (diphthong) and final: *kān, gīan: k'īwan; tung: tōk: d'ōg* and such-like. In the second place, it is quite possible that words with extremely different initials are really cognate — especially in the light of other Sinitic languages which show us that a simple Chinese initial is often a violent reduction of a long consonant group (Tib. *brgyad* = Chin. *pwal* 'eight') — and that e. g. 時 Arch. *ḍīæg* may be in affinity with 期 *g'īæg*; 壽 *ḍīóg* with 考 *k'ōg* and 老 *lóg*. But at present I leave all such questions open as a *cura posterior*. Here I keep within the limits of phonetically cognate groups, and quite arbitrarily I decide not to go outside the following principal categories.

First I divide the words into three great groups according to finals:

1. *-ng, -k, -g*;
2. *-m, -p, -b*;
3. *-n, -t, -d, -r*.

Then I subdivide these principal groups into categories according to Archaic initials:

- A. *k-, k'-, g-, g'-, ng- χ-, '-*;
- B. *t-, t'-, d-, d'-, ṭ-, ṭ'-, ḍ-, ḍ'--; ts-, ts'-, dz-, dz'-, tṣ-, tṣ'-, dṣ'--; ś-, s-, z-, -ṣ;*
- C. *n-, ṇ-, l-*;
- D. *p-, p'-, b'-, m-*.

(Words with initial consonant groups (*kl-, gl-* etc.) I consider to be so risky materials that I have only adduced them in a few cases).

For the vowels, on the contrary, I make no group limitations. Experience from Tibetan teaches us that this language has a richly developed *Ablaut* which allows

of the most varied vocalism inside the same word stem. I have come to the conviction that the same phenomenon obtains in Chinese.

Of the tones I take no notice at all. It would not do simply to apply the Anc. tones to the Arch. words, and it is doubtful if we can ever arrive at a detailed knowledge of the Arch. tone system. Hence the phonetic difference between the words of my tables is often greater than it appears from the forms given: there is often a tonal difference as well, which is not marked in my transcriptions. I hope to revert to this question in a future paper.

The purport of the tables should not be misunderstood. I am very far from affirming that all the words in each group *are* cognate; I only mean to say that they may be suspected of being cognate. In a few cases the affinity is absolutely obvious and certain. In many more it is strongly probable. In the rest it is only possible and at least worth discussion. So each small »family group» has to be considered merely as a kind of *frame*, containing materials from which a choice will have to be made in future. Definite results can only be gained by comparative Sinitic researches, for the phonetic similarity can sometimes very well be deceptive. There is, for instance, such a large number of Chinese words which all end in *-ng* that we may well suspect that many of them derive from Sinitic words ending in quite other consonants. Again, the *č-* and *š-* series may be a result of a simplification of the most varied Sinitic consonant groups. Therefore, at best, only a part of the combinations can be true word families; many similarities must reasonably be due to chance. And yet I do not hesitate to put up these frames, for a start has to be made and I see no other way of tackling the problem.

The present collection of possibly cognate words is not meant to be exhaustive; very many more could be adduced, but at present I only wish to give a few examples.

For an investigation like the present one it is necessary to be critical as to the words adduced. They must be words well known to have been real, living words. If we should draw upon the Kuang yün and Tsi yün, with their tens of thousands of »dictionary words», or even if we took all words for granted which are given in the earliest dictionaries, Er ya, Ts'ang kie p'ien, Fang yen, Shuo wen kie tsī, Kuang ya, we could easily obtain very large groups of »cognate words». But such materials are not acceptable. I adduce only words which either belong to the most common and current words of the language — these are the majority in my tables — or, if less common, are well attested in early *texts*.

## A. WORDS OF TYPE K-NG.

1 景 2 鏡 3 光 4 晃 5 煌 6 旺 7 瑩 8 耿 9 頌 10 炯 11 熒  
 12 螢 13 杲 14 赫 15 旭 16 熙 17 喜 18 曉 19 映 20 行 21 徨 22  
 往 23 迂 24 街 25 巷 26 邀 27 諧 28 告 29 更 30 改 31 麴  
 32 酵 33 迎 34 逆 35 糠 36 穀 37 穀 38 癭 39 癰 40 鴻  
 41 鵠 42 浴 43 沃 44 渥 45 形 46 營 47 影 48 亢 49 狂 50  
 競 51 衡 52 橫 53 扁 54 杠 55 至 56 涇 57 漿 58 澄 59 江 60  
 潢 61 津 62 泳 63 澤 64 洪 65 浩 66 瀕 67 洶 68 決 69 注 70 滄  
 71 擴 72 恆 73 驚 74 警 75 敬 76 惶 77 匪 78 競 79 恭 80 恐 81  
 嬰 82 懼 83 駭 84 忌 85 惡 86 愕 87 恍 88 恂 89 嚇 90 競 91 岡  
 92 擎 93 陞 94 嶸 95 扛 96 企 97 起 98 高 99 踞 100 喬 101 翹 102 丘  
 103 印 104 昂 105 仰 106 嶢 107 顛 108 嶽 109 崖 110 危 111 傲 112 堯 113 峽  
 114 興 115 香 116 馨 117 馨 118 炕 119 曠 120 洞 121 罌 122 稿 123 稿  
 124 菱 125 糗 126 熬 127 烘 128 煨 129 頸 130 頸 131 項 132 脛 133 骸  
 134 康 135 慶 136 幸 137 祺 138 喜 139 好 140 誑 141 誑 142 惑 143 乖  
 144 誑 145 詭 146 怪 147 欺 148 亢 149 狡 150 矯 151 疑 152 誑

1. *kjǎng* bright, light, scenery etc.: 2. *kjǎng* (light-reflector:) mirror: 3. *kwáng* light, brightness: 4. *g'wáng* bright: 5. *g'wáng* bright, to blaze: 6. *g'iwang* bright: 7. *g'iwǎng* glittering, as a gem: 8. *kěng* brilliant: 9, 10. *kiweng* light, bright: 11. *g'iweng* bright, lights: 12. *g'iweng* glow-worm, firefly: 13. *kog* bright; 14. *χǎk* burning, brilliant: 15. *χiuk* brightness: 16. *χiǎg* bright: 17. *χiǎg* bright: 18. *χiog* dawn, light; 19. *·iǎng* bright.

20. *g'ǎng* to walk, go, a street: 21. *g'wáng* to go to and fro: 22. *g'iwang* to walk, go: 23. *g'iwang* to walk, go: 24. *kěg* street: 25. *g'ǔng* street, lane; 26. *ngog* to ramble, stroll.

27. *kǔng* to speak, explain: 28. *kók*, *kóg* to tell.

29. *kǎng* to change, alter: 30. *kəg* to change, alter.

31. *k'iók* leaven, yeast: 32. *kóg* leaven, yeast.

33. *ngiǎng* to meet, go out to meet: 34. *ngiǎk* to go out to meet, go against, oppose.

35. *k'áng* husk of grain: 36. *k'ǔk* husk of grain: 37. *kuk* (husked things:) grain.

38. *·iǎng* a swelling, tumour: 39. *·iung* carbuncle, ulcer.

40. *g'ung* wild goose, wild swan: 41. *kók* snow-goose, swan.

42. *g'uk* to bathe; 43. *·ok* to soak, moisten: 44. *·ǔk* to soak.

## A

45. *g'ien*g contour, shape, form: 46. *giwěng* to draw a plan, to plan (to build etc.); 47. *·iǎng* form, image, shadow.

48. *k'áng* violent: 49. *g'iwang* violent, mad, furious: 50. *g'ǎng* to be violent, quarrel.

51. *g'ǎng* yoke of an ox, horizontal bar of a balance, cross-wise: 52. *g'wǎng* cross-wise, horizontal: 53. *kiweng* door-bar, bolt: 54. *kǔng* cross-bar.

55. *kieng* underground stream: 56. *kieng* to flow: 57. *g'iweng* rivulet: 58. *giwěng* rivulet: 59. *kǔng* river: 60. *g'wǎng* accumulated water: 61. *g'ien*g watery expanse: 62. *giwěng* to wade in water: 63. *k'óng* flood, inundation: 64. *g'ung* flood, inundation: 65. *g'óg* expanse of water: 66. *xung* expanse of water: 67. *xiung* to flow, rushing water: 68. *·iang* to flow, float: 69. *·wǎng* expanse of water: 70. *·ung* to flow, float.

71. *k'wáng* to hate, be annoyed at, abhor: 72. *g'ien*g to be annoyed.

73. *k'ǎng* frightened: 74. *k'ǎng* (to frighten:) to warn: 75. *k'ǎng* (awed:) respectful: 76. *g'wǎng* frightened: 77. *k'iwang* frightened: 78. *k'ǎng* frightened, respectful: 79. *k'ung* respectful: 80. *k'ung* to be frightened, fear: 81. *k'iwak* frightened looks: 82. *k'iwak* startled: 83. *g'eg* frightened: 84. *g'ǐeg* to fear: 85, 86. *ngák* to scare, scared: 87. *xwǎng* troubled: 88. *xiung* frightened: 89. *ǎk* frightened: 90. *ǎk* frightened.

91. *kǎng* mountain ridge: 92. *g'ǎng* to lift: 93. *g'ien*g cliff, precipitous: 94. *g'wěng* lofty: 95. *kǔng* to lift: 96. *k'ǐeg* to raise oneself on the toes: 97. *k'ǐeg* to lift, rise: 98. *kog* high: 99. *k'iog* to raise oneself on the toes: 101. *g'iog* to lift: 102. *k'ióg* hill: 103, 104. *ngǎng* high, to raise: 105. *ngiang* to raise the eyes, lift the face, look upwards: 106. *ngák* cliff, hill-side, edge: 107. *ngǎk* top of the head, forehead: 108. *ngók* mountain, peak: 109. *ngǐg* cliff, hill-side, edge: 110. *ngiǐwǐg* high, precipitous, dangerous: 111. *ngog* haughty: 112. *ngiog* high, lofty: 113. *ngiog* high, precipitous: 114. *xiang* to lift, raise.

115. *xiang* fragrant: 116. *xiang* musk: 117. *xieng* fragrant.

118. *k'áng* to dry: 119. *k'wáng* sunburnt, desolate, waste: 120. *g'ák* to dry up: 121. *g'ók* a spring drying up, become dry: 122. *kog* straw: 123. *kog* dry, withered, rotten: 124. *kōg* dried grass: 125. *k'ióg* parched rice, dry provisions: 126. *ngog* to dry, roast: 127. *xung* to burn, roast: 128. *xok* hot, burning.

129. *k'ǐeng* neck, throat: 130. *kieng* to cut the neck, behead: 131. *g'ǔng* neck.

132. *g'ien*g shin-bone, shank: 133. *g'eg* shin-bone, shank.

134. *k'áng* rich year, prosperity: 135. *k'ǎng* felicity, blessings, to felicitate: 136. *g'ěng* luck, fortunate: 137. *g'ǐeg* felicity: 138. *xiǐg* joy, to rejoice: 139. *xóg* to find pleasure in, to love.

## A

140. *kīwang* to deceive, cheat: 141. *g'īwang* to deceive, lie: 142. *g'wək* deceive, mislead, doubt: 143. *kwǝg* deceitful, crafty: 144. *kwǝg* to deceive: 145. *kīwǝg* deceitful, to deceive: 146. *kweg* bewildered, astonished: 147. *k'īæg* to deceive, to cheat: 148. *kīwæg* traitor: 149. *kog* crafty: 150. *kīog* to feign; 151. *ngīæg* doubt, to be in doubt; 152. *χwǝng* to lie.

153 梗 154 颞 155 荊 156 疆 157 耕 158 穎 159 刑 160 研 161 獲 162 刻 163 棘  
 164 戩 165 剗 166 鉸 167 鋸 168 疆 169 竟 170 境 171 垌 172 互 173 蔚 174  
 郭 175 極 176 國 177 域 178 囿 179 永 180 詠 181 恆 182 久 183 疚 184  
 網 185 綆 186 韁 187 絛 188 經 189 紘 190 鞅 191 望 192 羅 193 繫 194 系 195  
 係 196 絞 197 敲 198 繳 199 糾 200 繯 201 鞅 202 縲 203 策 204 縊 205 約 206  
 坑 207 塋 208 陸 209 礪 210 磬 211 磬 212 望 213 孔 214 空 215 腔 216 望  
 217 谷 218 壞 219 臼 220 齧 221 窖 222 胸 223 整 224 洩 225 枵 226 腐 227 臄  
 228 慷 229 廣 230 宏 231 弘 232 擴 233 廓 234 吳 235 呼 236 瓊 237 絳  
 238 紅 239 頤 240 僵 241 傾 242 降 243 航 244 匡 245 公 246 考 247  
 舊 248 舅 249 翁 250 剛 251 銅 252 僵 253 強 254 競 255 勁 256 確 257 硬  
 258 凝 259 垠 260 缸 261 銅 262 盜 263 嬰 264 嬰 265 寶 266 枉 267 肱  
 268 弓 269 鏗 270 曲 271 跼 272 屮 273 尫 274 奧 275 澳 276 皇 277 王  
 278 獲 279 搜 280 勾 281 拘 282 據 283 攜 284 右 285 有 286 握 287 擁 288  
 厄 289 扼 290 阨 291 軋 292 啞 293 抑 294 隘 295 戰 296 擊 297 摑 298 殛  
 299 蹙 300 考 301 敲 302 縞 303 皓 304 皤 305 皤 306 皎

153. *kǝng* spinous tree, thorny: 154. *kǝng* fish-bones, pricking: 155. *kǝng* bramble, thorn: 156. *kwǝng* awn of wheat etc: 157. *kǝng* plough-bill: 158. *g'īwǝng* awn, tip, sharp: 159. *g'īeng* (to cut:) to amputate, punish: 160. *g'īeng* (sharpen:) whetstone: 161. *g'wǝk* to cut the grain: 162. *k'ǝk* to cut: 163. *kǝk* brambles, thorny: 164. *kwǝk* cut off the ear (of an enemy, trophy): 165. *k'īweg* to stab, to cut: 166. *kog* sharp point, scissors; 167. *ngǝk* point, edge of a blade.

168. *kǝng* limit, boundary, frontier: 169. *kǝng* limit, end, finish: 170. *kǝng* limit, boundary, region: 171. *kiweng* border regions, frontier area: 172. *kǝng* extreme, limit: 173. *g'īǝng* extreme, limit, end, go to the extreme, exhaust, poor: 174. *kwǝk* outer wall of a city (its boundary): 175. *g'īǝk* extreme, end: 176. *kwǝk* (delimited, boundaried area:) state, country: 177. *g'īwǝk* boundary, region, state: 178. *g'īǝg*, *g'īǝk* (fenced area:) park.

179. *g'īwǝng* long, distant, continuous, eternal: 180. *g'īwǝng* (to draw out the words:) recite, sing: 181. *g'ǝng* perpetual, constant: 182. *kǝg* a long time, long: 183. *kǝg* chronic disease.



## A

184. *kǎng* string, tie, bond: 185. *kǎng* a long rope: 186. *kǎng* reins, bridle: 187. *kǎng* strings by which to wrap a child and carry it on the back: 188. *kieng* threads of a warp: 189. *g'weng* hat string, to tie: 190. *k'ung* bridle, halter: 191. *k'ung* to tie with a leather strap: 192. *k'ieŋ* halter: 193. *g'ieg* to tie, bind: 194, 195. *g'ieg* to bind, connect: 196. *kog* to wrap, to wind around, strangle: 197. *k'og* to tie: 198. *k'og* to wind around, bind: 199. *k'og* threefold cord, to tie: 200. *χwǎk* string: 201. *·iang* halter: 202. *·iēng* cap string, tassel: 203. *·iwēng* entwine: 204. *·iek* to strangle: 205. *·iok* to bind.

206. *k'ǎng* hole, pit, moat, canal: 207. *k'wǎng* grave, tomb, vault: 208. *g'wǎng* empty, city moat: 209. *kwǎng* a mine: 210. *k'ien* empty, hollow: 211. *k'ien* (hollow stone:) instrument of sonorous stone: 212. *g'iwēng* grave: 213. *k'ung* hole: 214. *k'ung* hollow, empty: 215. *k'ǎng* chest: 216. *k'ung* eyehole in axe: 217. *kuk* ravine, valley: 218. *g'og* moat: 219. *g'ig* mortar: 220. *k'og* hole: 221. *k'og* cave: 222. *χiung* chest: 223. *χǎk* ravine, gully: 224. *χiwǎk* moat, canal: 225. *χiog* hollow tree, hollow, empty: 226. *·ieng* chest, breast: 227. *·iak* breast.

228. *k'áng* wide-hearted, magnanimous: 229. *kwáng* wide, broad, vast: 230. *g'weng* spacious, large hall: 231. *g'wǎng* vast, liberal: 232. *k'wǎk* to widen, enlarge, extend: 233. *k'wǎk* wide, vast: 234. *g'óg* vast (as the sky): 235. *χiog* vast.

236. *g'iwēng* red-coloured precious stone: 237. *k'ong* strong red, purple: 238. *g'ung* red.

239. *g'áng* to go down in flying (birds): 240. *k'iang* to fall down, prostrate: 241. *k'iwēng* to fall down, tumble over: 242. *k'ong* to descend, go down, throw down.

243. *g'áng* square raft, two boats lashed together so as to form a square: 244. *k'iwang* square.

245. *kung* »old man», father: 246. *k'og* old: 247. *g'ig* ancient, old: 248. *g'ig* (»old man»:) uncle: 249. *·ung*, father, old man. Possibly *χiwǎng*, Mand. »hiung» 'elder brother' belongs here too.

250. *kǎng* hard: 251. *kǎng* steel: 252. *k'iang* stiff, rigid: 253. *g'iang* strong: 254. *g'ǎng* strong (see Tso chuan, Hi, 7th year): 255. *k'ien* strong, vigorous: 256. *k'ok* solid, hard: 257. *ngǎng* hard: 258. *ng'iang* (frozen water:) to become hard, solid, congeal.

259. *k'ung* jar: 260. *g'ǎng* jar: 261. *g'ien* soup-tureen: 262. *·áng* bowl, basin: 263, 264. *·eng* jar: 265. *·ung* jar.

266. *g'iwang* to bend, crooked: 267. *kwang* (bending part:) elbow: 268. *k'ung* a bow: 269. *k'iwak* hook: 270. *k'uk* to bend, crooked: 271. *g'uk* crooked, cramped: 272. *k'og* hook: 273. *·wǎng* crooked leg, lame: 274. *·og* angle, corner of the house: 275. *·iok* (»hook») the concave side of a bend in a meandering river.

## A

276. *g'wǎng* emperor, imperial: 277. *giwang* king, royal.

278. *g'wǎk* to catch, seize: 279. *kɿwak* to grasp, seize: 280. *kɿók* a handful: 281. *kɿók* to hold in both hands: 282. *kɿwag* to lay hands on, seize, hold: 283. *g'ieg* to hold by the hand, lead: 284. *giǔg* right hand: 285. *giǔg* to hold, have; 286. *·ūk* to grasp, seize.

287. *·iung* to press: 288. *·ēk* narrow, straits: 289. *·ēk* to press, throttle, grasp firmly: 290. *·ēk* narrow pass, defile: 291. *·ēk* yoke, to restrain: 292. *·iēk* throat: 293. *·iək* to press down: 294. *·ēg* a pass, straits, narrow.

295. *kɿak* long lance: 296. *kiek* to beat, strike, kill: 297. *kwek* to beat: 298. *kɿək* to kill: 299. *kóg* large drum (which is beaten): 300. *k'óg* to beat: 301. *k'og* to beat.

302. *kog* white silk: 303, 304. *g'óg* white: 305. *kǐög* white: 306. *kiog* white.

307 鞠 308 鞠 ○ 309 盪 310 盪 311 霍 312 瘡 ○ 313 脛 314 鞋 ○ 315 陳 316  
 卻 317 邇 318 隔 319 隔 320 解 321 異 ○ 322 殃 323 惡 324 亞 325 虐 ○ 326  
 冀 327 欲 328 求 329 要 ○ 330 鞅 331 革 ○ 332 頰 333 頤 ○ 334 跪 335 跽  
 ○ 336 蟹 337 基 ○ 338 蟹 339 學 340 校 341 效 342 敦 343 學 344 巧 345 考  
 ○ 346 豪 347 驍 348 趙 ○ 349 奇 350 幽 351 黠 352 竈 ○ 353 嬌 354 夭 355  
 妖 356 么 ○ 357 交 358 交 ○ 359 綯 360 球 361 毬 ○ 362 鳥 363 鴉 364 鴿  
 365 毫 366 裴 367 九 368 逵 ○ 369 覺 ○

307. *kɿók* to rear, nourish: 308. *χɿók* to rear, nourish.

309. *kɿak* haste, urgent: 310. *g'iwag* sudden, rapid: 311. *χwák* sudden: 312. *χwák* (sudden illness:) cholera.

313. *kɿak* leg, foot: 314. *g'ēg* boot.

315. *k'ɿak* rift, crack: 316. *k'ǎk* (to separate oneself from:) reject, decline: 317. *k'wák* rift in the clouds, weather clearing: 318. *kēk* to separate, partition: 319. *kēk* diaphragm: 320. *kēg* to separate, divide, dissolve: 321. *giəg* separate, different.

322. *·iang* misfortune, calamity, to destroy: 323. *·ák* bad, vicious, wicked: 323. *·ág* to hate: 324. *·ūg* inferior; 325. *ngɿok* cruel, wicked, to maltreat, destroy.

326. *kɿək* to wish, hope for: 327. *giuk* to wish, desire: 328. *g'ióg* to seek for, pray for, entreat, aim at: 329. *·iog* to wish, seek for.

330. *k'wák* leather: 331. *kək* hide, skin, to flay.

332. *g'əg* chin, jaw: 333. *giəg* chin, jaw.

334. *g'iwēg* to kneel: 335. *g'ieg* to kneel.

336. *g'ēg* crab: 337. *giəg* small crab.

338. *g'wǎng* school: 339. *g'ók* to study, learn, a school: 340. *kög* school: 340. *g'ög*

## A

to study, examine, compare: 341. *g'ōg* (to learn:) to imitate: 342. *kōg* to teach: 343. *g'ōg* to teach: 344. *k'ōg* (trained:) skilled: 345. *k'ōg* (to study): to examine.

346. *g'og* vigorous, martial, brave: 347. *kiog* vigorous: 348. *kiōg* vigorous, courageous.

349. *·iog* sundown, darkness: 350, 351. *·iōg* dark, black: 352. *·iōg* secluded.

353. *kiog* delicate, beautiful; 354. *·iog* young, delicate, tender, fresh, beautiful:

355. *·iog* to die young: 356. *·iōg* small, tender.

357. *kōg* to cross, entwine: 358. *g'ōg* to cross.

359. *kiōk* foot-ball: 360. *g'iōg* jade ball: 361. *g'iōg* ball.

362. *kiōg* owl: 363. *giog* (so in Ts'ie yün) owl (the dialects point to an Arch. *χiog*); 364. *χiōg* owl.

365. *g'og* hair: 366. *g'iōg* fur.

367. *k'üŋ* nine: 368. *g'iwəg* point where nine roads meet.

369. *kōk* to wake up: 369. *kōg* to wake up.

## B. WORDS OF TYPE T-NG.

1 償 2 貽 3 賜 4 贈 5 賞 6 賜 7 正 8 政 9 整 10 征 11 懲  
 12 董 13 職 14 飭 15 勅 16 帝 17 治 18 則 19 司 20 正 21 直  
 22 植 23 置 24 蒔 25 栽 26 章 27 程 28 稱 29 度 30 尺 31 測 32 商  
 33 升 34 通 35 桶 36 筩 37 筒 38 衙 39 衙 40 銃 41 潰 42 發  
 43 窗 44 撐 45 撐 46 板 47 璋 48 杖 49 丈 50 珽 51 挺 52 筵 53 挺  
 54 楨 55 楹 56 橋 57 杙 58 支 59 枝 60 肢 61 條 62 橋 63 棚 64 上  
 65 尚 66 揚 67 賜 68 頂 69 登 70 乘 71 棟 72 冢 73 塚 74 戴  
 75 陟 76 卓 77 提 78 臺 79 擡 80 崇 81 截 82 穎 83 昇 84 嵩 85 盈  
 86 贏 87 贏 88 盛 89 充 90 容 91 勇 92 阻 93 獎 94 壯 95 勝  
 96 龍 97 憚 98 祉 99 怡 100 悰 101 偵 102 瞪 103 督 104 覲 105 矚  
 106 眈 107 眇 108 相 109 悞 110 省 111 伺 112 打 113 鉦 114 沖 115 撞 116 鐘  
 117 衝 118 鏞 119 柝 120 鐸 121 櫨 122 策 123 極 124 錫 125 觸 126 咎 127 擣  
 128 舂 129 膛 130 宕 131 洞 132 井 133 井 134 中 135 仲 136 堂 137 廷  
 138 庭 139 寺 140 宗 141 脹 142 漲 143 腫 144 瘡 145 瘡 146 成  
 148 終 149 己

1. *diang* to give compensation: 2. *diəg* to give, bequeath: 3. *iōg* to give; 4. *dz'əng* to give, bestow; 5. *siang* to give, bestow, reward: 6. *sieŋ* to give, bestow.

7. *iēng* straight, correct: 8. *iēng* (correcting, regulating, adjustment:) government, administration: 9. *iēng* (to make straight:) to adjust: 10. *iēng* (to correct:)

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to punish: 11. *d'iang* to correct, punish: 12. *tung* to correct, govern: 13. *iək* to direct, govern, office, official: 14, 15. *t'ək* to direct, to order: 16. *tiæg* ruler, emperor: 17. *d'iaæg* to govern; 18. *tsək* law, rule; 19. *siæg* to direct, govern, manage.

20. (cf. the preceding) *iëng* straight: 21. *d'ək* straight, upright: 22. *diək* door-post, to set upright, to erect, to plant: 23. *tiæg* to put up, establish, place: 24. *diæg* to erect, to plant; 25. *tsæg* to plant.

26. *iang* a measure, norm, rule: 27. *d'icng* measure, to measure (weight, length, volume): 28. *i'iang* to weigh, steelyard: 29. *d'ák* to measure, *d'ág* a measure: 30. *i'iak* a measure of ten inches; 31. *ts'iek* to measure, to fathom; 32. *siang* to measure, to appreciate, to deliberate: 33. *sieng* a pint.

34. *t'ung* to pass through, communicate (all through, all etc.): 35. *t'ung* (tube-formed:) tub, barrel: 36, 37. *d'ung* tube, pipe: 38. *d'ung* passage, connecting lane: 39. *i'ung* passage, connecting lane: 40. *i'iong* hole through the head of an axe: 41. *d'uk* sluice, drain, gutter, ditch: 42. *d'üg* sluice, drain, gutter, ditch; 43. *ts'üng* vent, flue, window.

44, 45. *t'äng* a post, pole, to pole: 46. *d'äng* a prop, post: 47. *iang* sceptre: 48. *d'iang* staff, pole: 49. *d'iang* a length of ten feet: 50. *i'eng* sceptre, baton: 51. *i'eng*, *d'ieng* to stick out, stiff: 52. *d'ieng* stalk, straw, small beam: 53. *d'ieng* stalk, stick, staff: 54. *tiëng* pole: 55. *diëng* pillar, column: 56. *tüng* pole, post, stake: 57. *diək* stake: 58, 59. *i'icg* branch: 60. *i'icg* limb: 61. *d'ióg* branch, stick; 62. *dz'iang* boom, spar: 63. *ts'ek* bars, fence, palissade.

64. *liang* above, on top, high, ascend: 65. *liang* high: 66. *liang* to raise, lift: 67. *liang* tossed up by the wind: 68. *tieng* top of the head, to carry on the head, summit: 69. *täng* to ascend, rise, mount: 70. *d'iang* to ascend, to mount, ride on: 71. *tung* ridge-pole, the top: 72. *tiung* peak, lofty, mound, tumulus: 73. *tiung* tumulus, tomb: 74. *tag* to carry on the head: 75. *tiək* to ascend, rise: 76. *tök* high, lofty: 77. *d'ieg* to raise high, lift: 78. *d'æg* elevated platform, a look-out, high: 79. *d'æg* to raise high, lift, carry; 80. *dz'ióng* high, lofty: 81. *tsæg* (put on top:) to load (as a car); 82. *säng* (top of the head:) forehead: 83. *sieng* to ascend, rise: 84. *sióng* lofty.

85. *diëng* full: 86. *diëng* full, ample, surplus: 87. *diëng* abundant, surplus: 88. *diëng* to be full of, hold, contain; abundant, overflow: 89. *i'iong* full, to fill: 90. *diung* (to be full of:) contain, hold.

91. *diung* vigorous, brave; 92. *tsäng* strong horse: 93. *tsiang* to encourage: 94. *tsiang* strong, vigorous, robust; 95. *sieng* to have the force for doing, capable; (to be the stronger:) to conquer.

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96. *t'jung* to find pleasure in; be in favour: 97. *djak* pleased, happy, joy: 98. *t'jæg* happy, happiness: 99. *djæg* pleased, joy; 100. *dz'óng* pleased, glad, joy.

101. *t'jěng* to spy: 102. *d'eng* to stare: 103. *tók* to supervise, inspect, examine: 104. *d'ók* to see: 105. *îjuk* to look, stare: 106. *t'jæg* to stare: 107. *t'ioğ* to stare; 108. *siang* to gaze, look, consider, regard: 109. *sieng* (discerning, mentally clear-sighted:) intelligent, to understand: 110. *siěng* to watch, look, examine: 111. *siæg* to watch, spy.

112. *tieng* to beat: 113. *îjěng* a small bell (which is struck): 114. *d'jóng* to dash against: 115. *d'űng* to strike, beat, knock against: 116. *îjung* a bell: 117. *î'jung* rush against: 118. *djung* a big bell: 119. *t'ák* »beater«, wooden knocker used by night guards: 120. *d'ák* bell with clapper: 121. *d'ók* (beater, propeller:) oar, scull: 122. *tjók* to ram, pound, build: 123. *tūk* to beat, strike: 124. *d'ūk* small bell: 125. *î'juk* to butt, knock against, rush against, strike: 126. *t'jæg* to beat, flog: 127. *tóg* to pound; 128. *şjung* to pound, to ram.

129. *t'áng* (the dialects indicate a *d'áng*) cavity, hollow, chest, palate: 130. *d'áng* cave, cavern, grotto: 131. *d'ung* cave, hole, pit, ravine: 132. *tsjěng* a well: 133. *dz'jěng* pit, pit-fall, hole.

134. *tjóng* middle, centre, interior, inside: 135. *d'jóng* (the middle one:) second of three (or four) brothers, second of three months.

136. *d'áng* hall: 137. *d'ienğ* court: 138. *d'ienğ* hall, court; 139. *dzjæg* hall: 140. *tsóng* ancestral hall, temple (the last, however, more probably to gr. 542 below).

141. *tjang* to swell, swelled abdomen, dropsical: 142. *tjang* swelling water, to flood, to rise: 143. *îjung* to swell, tumefy, tumour: 144, 145. *djung* dropsy of leg.

147. *djěng* to complete, finish, achieve: 148. *îjóng* to finish, end; 149. *zjæg* to finish, end.

150. *t'āk* to cleave, split: 151. *îjak* to hew, chop: 152. *tiək* barb of arrow: 153. *tək* (to prick:) to blame, criticize: 154. *t'iek* to cut asunder: 155. *tūk* to cut, chop, hew: 156. *tūk* to cut gems: 157. *îjěg* a spinous orange tree, thorn: 158. *î'jæg* tooth, esp. front tooth: 159. *tog* knife: 160, 161. *tjóg* to cut gems, carve; 162. *dz'jang* to wound, kill: 163. *ts'jang* a wound, sore: 164. *ts'jang* to wound: 165. *tsjak* to cut off: 166. *ts'ək* thorn: 167. *tsək* to blame, criticize: 168. *ts'jěk*, *ts'jěg* thorn, to sting, blame, criticize: 169. *dz'ək* a cut-throat, bandit; to hurt, to wound: 170. *ts'jak* a sharp plough share: 171. *dz'ák* chisel, bore: 172. *tsuk* barb of arrow: 173. *ts'ūk* to spear fish, pierce, stab: 174. *ts'jěg* thorn: 175. *ts'jěg* to blame, criticize: 176. *tsæg* to slaughter: 177. *dz'æg* to cut: 178. *tsjæg* a hoe: 179. *tsjæg* to cut, slice, mince: 180. *tsjæg* to stab: 181. *dzjæg* plough-share: 182. *tsóg* jujube (thorny): 183. *tsjog* to

## B

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 150 | 垢   | 151 | 斫   | 152 | 鏑   | 153 | 誦   | 154 | 剔   | 155 | 斲   | 156 | 琢   | 157 | 杙   | 158 | 齒   | 159 | 刀   | 160 | 瑣   |
| 161 | 彫   | 162 | 戕   | 163 | 瘡   | 164 | 創   | 165 | 斲   | 166 | 萊   | 167 | 責   | 168 | 刺   | 169 | 賊   | 170 | 罍   | 171 | 鑿   |
| 172 | 鏃   | 173 | 擗   | 174 | 刺   | 175 | 諫   | 176 | 宰   | 177 | 裁   | 178 | 鉞   | 179 | 戢   | 180 | 剗   | 181 | 起   | 182 | 夷   |
| 183 | 刺   | 184 | 傷   | 185 | 螫   | 186 | 析   | 187 | 削   | 188 | 斯   | 189 | 撕   | ○   | 190 | 張   | 191 | 長   | 192 | 昶   | 193 |
| 腸   | 194 | 塲   | 195 | 掌   | 196 | 常   | 197 | 敞   | ○   | 198 | 棠   | 199 | 同   | 200 | 銅   | 201 | 調   | 202 | 相   | ○   | 203 |
| 等   | 204 | 嶺   | 205 | 增   | 206 | 厝   | 207 | 阡   | ○   | 208 | 腺   | 209 | 腥   | ○   | 210 | 糖   | 211 | 棠   | 212 | 橙   | 213 |
| 蔗   | 214 | 飴   | 215 | 錫   | ○   | 216 | 疼   | 217 | 痛   | 218 | 恫   | ○   | 219 | 葬   | 220 | 賊   | 221 | 倉   | 222 | 藏   | ○   |
| 223 | 湧   | 224 | 溶   | 225 | 濤   | 226 | 滔   | 227 | 漾   | ○   | 228 | 澤   | 229 | 滴   | 230 | 涿   | 231 | 汜   | 232 | 漬   | 233 |
| 滋   | 234 | 液   | ○   | 235 | 濯   | 236 | 滌   | 237 | 洮   | 238 | 澡   | 239 | 浙   | 240 | 漱   | 241 | 涓   | ○   | 242 | 陽   | 243 |
| 昌   | 244 | 曠   | 245 | 的   | 246 | 燭   | 247 | 熾   | 248 | 朝   | 249 | 潮   | 250 | 耀   | 251 | 耀   | 252 | 煖   | 253 | 昭   | 254 |
| 照   | 255 | 晝   | 256 | 晶   | 257 | 晴   | 258 | 晴   | 259 | 燭   | 260 | 星   | 261 | 晰   | 262 | 燦   | ○   | 263 | 陽   | 264 | 湯   |
| 265 | 煬   | 266 | 鼎   | 267 | 蒸   | 268 | 蒸   | 269 | 融   | 270 | 鎔   | 271 | 揮   | 272 | 炙   | 273 | 灼   | 274 | 粥   | 275 | 熟   |
| 276 | 匄   | 277 | 陶   | 278 | 鑄   | 279 | 涸   | 280 | 壑   | 281 | 壑   | 282 | 鼎   | 283 | 炒   | 284 | 竈   | 285 | 焦   | 286 | 湘   |
| 287 | 鬲   | 288 | 腊   | 289 | 鏤   | 290 | 燥   | 291 | 燒   | 292 | 脩   | 293 | 銷   | 294 | 消   | ○   | 295 | 精   | 296 | 清   | 297 |
| 淨   | 298 | 澌   | 299 | 澄   | 300 | 湜   | 301 | 淑   | ○   |     |     |     |     |     |     |     |     |     |     |     |     |

cut off; 184. *xiang* to wound, injure: 185. *xiak* to sting: 186. *xiək* to cut asunder, cleave: 187. *sio*k to slice off, cut off, to pare: 188, 189. *siə*g to cleave.

190. *tiang* to extend, draw out, spread, expanse, surface: 191. *tiang* become long, grow up: 192. *t'iang* a long day: 191. *d'iang* extended, long: 193. *d'iang* (the long ones:) bowels: 194. *d'iang* area, arena, open space: 195. *tiang* palm of the hand: 196. *diang* (long:) constant: 197. *t'iang* plateau, high open space.

198. *tang* league, union, party, faction: 199. *d'ung* join, together: 200. *d'ung* alloy, bronze: 201. *d'io*g to join, mix; 202. *siang* joined, together, mutual.

203. *tang* steps of staircase, ledge, section, degree: 204. *tang* ledges, tiers of a hill; 205. *tsang* (to place layer on layer:) to pile up, accumulate, add, increase: 206. *dz'ang* layer, stratum, storey, degree: 207. *dz'ag* staircase.

208. *sog* fat, smell of raw meat, rancid: 209. *sieng* fat, smell of raw meat, rancid.

210. *d'ang* sugar: 211. *d'ang* sweet apple: 212. *d'eng* orange (cf. *kan* orange = *kan* the sweet fruit): 213. *liag* sugar cane: 214. *diog* sugar, sweet; 215. *dz'ie*ng sugar, sweets.

216. *d'ong* pain, to ache: 217. *t'ung* pain, to ache: 218. *t'ung* pained, to suffer, moan.

219. *tsang* to hide, bury: 220. *tsang* hidden goods: 221. *ts'ang* store-room, granary: 222. *dz'ang* to hide, to store, store-room.

223. *diung* to well up (as water): 224. *diung* overflowing water: 225. *d'og* great waves: 226. *t'og* swelling and rushing water: 227. *ziang* moving water, waves.

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228. *d'āk* to soak: 229. *tiēk* to drop, drip: 230. *tūk* to drip, trickle; 231. *dz'ūk* to soak: 232. *dz'ięg* to soak: 233. *tsięg* to soak: 234. *ziak* fluid, juice.

235. *d'ōk*, *d'ōg* to wash, rinse: 236. *d'ōk* to wash, scour: 237. *t'og* to wash, rinse; 238. *tsog* to bathe; 239. *siek* to wash rice: 240. *sīōg* to rinse: 241. *sīōg* water in which rice has been washed.

242. *dīang* light and heat of the sun: 243. *ī'iang* sunshine, shining: 244. *d'ung* sun just rising: 245. *tiok* bright: 246. *īiuk* torch: 247. *ī'ięg* to blaze: 248. *tiog* dawn, morning: 249. *d'iog* morning ceremony, audience etc.: 249. *d'iog* morning tide: 250, 251. *dīog* bright: 252. *dīog* bright, to enlighten: 253. *īiog* bright, brilliant: 254. *īiog* to shine upon, enlighten: 255. *tiōg* day-light, day-time (as opp. to night); 256. *tsięng* bright, clear, chrystal: 257. *tsięng* iris of the eye: 258. *dz'ięng* clearing sky, light: 259. *tsiok* torch, to light; *sieng* star: 261. *siek* bright: 262. *sīok* bright, flashing.

263. (cf. the preceding group) *dīang* light and heat of the sun: 264. *t'āng* hot liquid: 265. *dīang* to roast, to heat, to fuse: 266. *tieng* (boiler:) tripod: 267. *īieng* to steam: 268. *īieng* firewood, to smoke: 269. *dīōng* to steam, to heat: 270. *dīung* to fuse metal: 271. *t'āk* withered leaves: 272. *īiak*, *īiag* to roast: 273. *īiok* to roast, burn: 274. *īiōk* to boil rice, gruel: 275. *dīōk* heated through, well cooked, ripe: 276, 277. *d'ōg* (burner, burnt goods:) kiln; pottery: 278. *īiōg* to fuse, cast metal: 279. *tiōg* fade, wither: 280. *dīog* kiln: 281. *dīog* jar (burnt piece); 282. *tsięg* a kind of tripod (boiler): 283. *ts'ōg* to fry, roast: 284. *tsōg* stove, furnace: 285. *tsiog* to scorch, burn; 286. *sīang* to boil: 287. *sīang* to boil: 288. *sīak* dried meat: 289. *sīok* to melt; bright: 290. *sog* to dry: 291. *sīog* to burn, bake: 292. *sīōg* dried meat: 293, 294. *sīog* to melt (metal).

295. *tsięng* pure, fine, essence: 296. *ts'ięng* pure, clean, limpid: 297. *dz'ięng* clean, pure, cleanse; 298, 299. *d'ięng* clear, pure, limpid: 300. *dīak* pure, clean water: 301. *dīōk* pure.

302, 303, 304. *dz'ięng* quiet, still: 305. *dz'iek* quiet, still.

306. *t'iang* dejected, disappointed: 307. *ī'iang* dejected: 308. *t'ōng* grieved: 309. *d'ieg* to wail: 310. *tog* grieved: 311. *d'og* grieved: 312. *t'iog* grieved: 313. *dīog* distressed: 314. *t'īōg* dejected: 315. *d'īōg* sorry; 316. *ts'iang* grieved: 317. *ts'īak* grief, pity: 318. *ts'og* sad: 319. *ts'iog* grief, sorry: 320. *dz'iog* distressed: 321. *dz'īōg* grief; 322. *sāng* mourning: 323. *sīak* pained, grief, pity.

324. *t'iek* to fear, respectful; 325. *dz'āk* bashful; 326, 327. *sīung* terrified, respectful: 328. *sīōk* terrified, respectful: 329. *sīeg* to fear.

330. *t'ięng* red: 331. *d'ięng* naked (red, flesh-coloured): 332. *d'ōng* red: 333. *ī'iak*

## B

302 靖 303 諄 304 靜 305 寂 ○ 306 悵 307 悄 308 忡 309 啼 310 忉 311 淖 312  
 詔 213 惶 314 惆 315 怵 316 愴 317 惻 318 悵 319 悄 320 悵 321 愁 322 喪 323  
 惜 ○ 324 惕 325 悵 326 竦 327 悵 328 肅 329 蕙 ○ 330 頰 331 程 332 彤 333  
 赤 334 駢 335 頤 336 舊 337 寇 ○ 338 蒼 339 青 ○ 340 醒 341 耐 342 耐 343  
 酒 344 滴 ○ 345 碇 346 訂 347 定 348 亭 349 停 350 停 ○ 351 孕 352 育 353 畜 354  
 胎 355 子 356 孽 357 字 358 生 359 姓 360 性 ○ 361 虹 362 虹 363 蜻 ○ 364 倉 365  
 362 愈 363 仁 364 蹙 365 促 366 蹙 367 造 368 倏 369 倏 370 速 ○ 371 羊 372  
 牂 ○ 373 洋 374 瀛 ○ 375 聽 376 聰 ○ 377 頑 378 臧 379 祥 380 祿 ○ 381  
 像 382 似 383 俏 384 肖 385 猶 ○ 386 童 387 犖 388 犖 ○ 389 冬 390 凍 391  
 滄 392 清 393 霜 ○ 394 知 395 智 396 志 397 誌 398 悠 399 想 400 諒 401 思  
 402 猶 ○ 403 擋 404 塘 405 塘 406 帳 407 障 408 障 409 廠 410 城 411 壁 412  
 町 413 幘 414 墉 415 場 416 遮 417 幘 418 晴 419 綢 420 侑 421 幘 422 膏 ○  
 423 攪 424 搥 425 由 426 抽 ○ 427 當 428 食 429 饒 430 饒 431 飼 ○

red; 334. *siəng* red horse: 335. *siak* red: 336. *siək* a red flower: 337. *siōg* Rubia, red-colouring stuff.

338. *ts'ang* green, blue: 339. *ts'eng* green, blue.

340. *d'ieng* drunk: 341. *tieng* drunk: 342. *d'iōg* fine spirits; 343. *tsiōg* spirits: 344. *dz'iōg* spirits.

345. *tieng* (a «fixer»:) anchor: 346. *t'ieng* (to settle:) to judge, decide: 347. *d'ieng* to fix, settle: 348 a. *d'ieng* to settle, to stop: 348 b. *d'ieng* stopping place, resting place, pavilion: 348 c. *d'ieng* stagnant water.

349. *dieng* pregnant: 350. *diōk* to rear and foster children: 351. *l'iōk* to rear, nourish, feed: 352. *t'ag* womb, pregnant; 353. *tsiōg* (progeny:) son: 354. *dz'iag* to breed, rear, bear, nurture; 355. *səng* to bear, beget; live: 356. *siəng* (maternity:) clan (issuing from the same mother): 357. *siəng* (innate qualities:) nature, natural disposition.

358. *tieng* dragon fly: 359. *d'ieng* dragon fly; 360. *ts'eng* dragon fly.

361. *ts'ang* hurried: 362. *ts'ung* hurried: 363. *tsəg* suddenly, abruptly: 364. *tsiōk* to urge, urgent: 365. *ts'ik* to urge: 366. *tsog* to hasten, quickly: 367. *ts'ōg* to hasten: 368, 369. *siōk* suddenly, quickly: 370. *suk* to hurry, quickly.

371. *ziang* sheep (male and female): 372. *tsang* sheep (female).

373. *ziang* ocean: 374. *dieng* ocean.

375. *t'ieng* to hear: 376. *ts'ung* acute of hearing.

377. *tieng* auspicious; 378. *tsang* auspicious: 379. *dziang* auspicious: 380. *dz'ag* auspicious.



## B

381. *dziang* image, shape, form, like: 382. *dziæg* like, resembling: 383. *ts'ioŋ* like, resembling: 384. *sioŋ* like, resembling: 385. *ziôg* like, resembling.

386. *d'ung* youngster, young boy or girl: 387. *d'ung* hornless calf: 388. *d'uk* calf.

389. *tông* winter: 390. *tung* to freeze: 391. *ts'iang* cold: 392. *ts'ieŋ* cold: 393. *siang* frost.

394. *tiæg* (to have in the mind:) to know: 395. *tiæg* knowledge, wisdom: 396. *liæg* mind, thought, will, resolution: 397. *liæg* (to have in the mind:) to remember; a record: 398. *diôg* to think (of): 399. *siang* to think (of): 400. *siæk* to know: 401. *siæg* to think (of): 402. *ziôg* a counsel, a plan.

403. *tâng* to screen, protect, prevent, resist: 404. *d'âng* to obstruct, parry: 405. *d'âng* dyke: 406. *tiang* curtain: 407. *liang* dyke, bank: 408. *liang* dyke, screen, barricade, partition: 409. *li'iang* cover, shelter, shed: 410. *li'ieŋ* city wall: 411. *tang* umbrella: 412. *t'ieŋ* raised path (dyke) between fields: 413. *d'ũng* a plume fan, to screen, curtain: 414. *diung* a wall: 415. *diæk* dyke between fields, boundary: 416. *liæg* to screen, protect, cover, hide: 417. *d'ôg* a covering, *d'iôg* a screen, curtain: 418. *d'iôg* dyke between fields, field: 419. *d'iôg* coverlet, curtain: 420. *tiôg* to veil, conceal: 421. *dz'iang* wall: 422. *seng* film over the eye; obstruction, calamity.

423. *d'ôk* to pull out: 424. *t'ôg* to draw out, pull out: 425. *diôg* come out, out from, from: 426. *t'iôg* to draw out, pull out.

427. *liang* to taste: 428. *d'iæk* to eat: 429. *li'ieŋ* nourishment, food and drink: 430. *t'og* to eat gluttonously: 431. *dziæg* food.

432 邇 433 緯 434 紹 435 縱 436 釋 437 赦 438 寯 439 瀉 440 踴 441 倒 442 育 443 苞 444 暉 445 曷 446 錫 447 遞 448 代 449 斲 450 夕 451 汭 452 宿 453 夙 454 夜 455 舍 456 寯 457 贖 458 籍 459 冊 460 策 461 策 462 借 463 債 464 等 465 待 466 侍 467 俟 468 廐 469 伺 470 膝 471 繩 472 統 473 繹 474 繪 475 繳 476 勒 477 屬 478 蜘蛛 479 締 480 紉 481 係 482 紹 483 紉 484 倭 485 紂 486 綏 487 綏 488 綏 489 綜 490 總 491 席 492 績 493 績 494 攀 495 緇 496 緇 497 囚 498 素 499 束 500 縮 501 絲 502 縲 503 縲 504 縲 505 縲 506 踰 507 踰 508 迪 509 躡 510 躡 511 躡 512 躡 513 躡 514 之 515 踰 516 踰 517 從 518 踰 519 踰 520 跡 521 踰 522 踰 523 足 524 踰 525 踰 526 踰 527 踰 528 承 529 擇 530 擇 531 擇 532 持 533 受 534 授 535 將 536 捉 537 采 538 採 539 稽 540 以 541 收 542 烝 543 衆 544 氏 545 僞 546 宗 547 叢 548 積 549 族 550 曹 551 稍 552 小 553 少 554 甄 555 律 556 匱 557 韜 558 鞘 559 鵠 560 鵬 561 鷲 562 笛 563 飢 564 饑 565 鳴 566 蕭 567 旌 568 幟 569 得 570 迨 571 到 572 即 573 就 574 作 575 造

## B

432. *d'ag* remiss, careless: 433. *l'ïok* to slacken, indulgent: 434. *l'ïog* to unbend a bow, to slacken, release: 435. *tsiung* to slacken the rein, lax, loose; 436. *sïak* to loosen, let go: 437. *sïag* (to let off:) to pardon, amnesty: 438. *sïag* to let loose, to ease, release: 439. *sïag* (to let loose water:) to drain.

440. *d'ang* to fall, slip: 441. *tog* to fall.

442. *tsiung* leek flower: 443. *ts'ung* leek, onion.

444. *dïak* relay of horses, post: 445. *dïek* to change, *dïeg* (changeable, mobile:) easy: 446. *dïek* chameleon, lizard: 447. *d'ieg* to substitute, take the place of, change: 448. *d'ag* to substitute, take the place of, change; 449. *siek* chameleon, lizard.

450. *dziak* evening: 451. *dziak* evening tide; 452. *sïök* to pass the night: 453. *sïök* early morning (before dawn): 454. *ziag* night: 455. *sïag* (place for passing the night:) hotel, lodging, house: 456. *sïog* night, darkness.

457. *d'uk* writing tablet, document; 458. *dz'ïak* writing tablet, list, register, record: 459, 460. *ts'ek* writing tablet, list, register, record.

461. *t'ag* to lend, to loan (on interest); 462. *tsïak*, *tsïag* to lend, to loan: 463. *tsëg* debt, to owe money.

464. *tang* to wait: 465. *d'ag* to wait, to wait upon, to treat: 466. *dïag* to wait upon; 467. *dë'ïag* to wait; 468. *sïeg* waiter, attendant: 469. *sïag* to wait, to wait upon.

470. *d'ang* string, cord, to tie, to bind: 471. *dïang* string, cord: 472. *t'ung* a thread, to attach, join: 473. *dïak* to draw out threads (from cocoons), unravel: 474. *l'ïak* to weave: 475. *l'ïok* silk string (tied to arrow): 476. *tiok* reins: 477. *l'ïuk* tied to, attached to; *dïuk* attached, subordinated: 478. *tïeg* («weaver») spider: 479. *d'ieg* to tie, knot: 480. *d'ôg* to twist, bind: 481. *t'ôg* twisted silk cord: 482. *dïog* («anknüpfen») to join on, continue: 483. *d'ïôg* thread, to weave, woven silk: 484. *d'ïôg* leather reins: 485. *d'ïôg* crupper: 486. *d'ïôg* to bind, tie: 487. *dïôg* seal ribbon; 488. *tsang* woven silk: 489. *tsông* warp, to weave: 490. *tsung* to tie together, collect: 491. *dziak* (plaited, woven thing:) mat: 492. *tsiek* to twist, spin: 493. *dziuk* («anknüpfen») to join on, continue: 494. *tsïôg* to bind, tie together: 495, 496. *ts'ïôg* crupper: 497. *dziôg* to tie, bind, captivate, a captive; 498. *sdk* cord: 499. *sïuk* to tie together, bundle: 500. *sïuk* to bind, bind together, restrict etc.: 501. *sïag* silk thread: 502. *sog* to draw out threads (from cocoons), unravel: 503. *sög* («weaver») spider: 504. *siôg* spider.

505. *dïang* to follow, escort: 506. *l'ïung* heel, to follow: 507. *l'ïak* to tread, trample, foot-sole: 508. *d'ïök* to tread, walk: 509. *d'ïuk* to tread, foot-print: 510. *d'ieg* to tread on, kick: 511. *d'ieg* hoof: 512. *d'ieg* leather shoes: 513. *l'ïag* foot, toes: 514

B

*liæg* to go to: 515. *d'óg* to trample: 516. *tsiung* footsteps, to follow: 517. *dz'jung* to follow: 518. *tsiak* to walk carefully: 519. *tsiak* to walk with small step: 520. *tsiék* foot-prints, traces: 521. *tsiök* to walk carefully: 522. *ts'iók* to trample, kick: 523. *tsiuk* foot: 524. *dziæg* to follow after, succeed: 525. *sia* slipper: 526. *siék* to go to: 527. *siök* to walk carefully.

528. *diæg* to hold, receive, present: 529. *d'ák* to pick, select: 530. *liak* to pick up, take: 531. *ték* to take, to pick: 532. *d'ieg* to grasp, hold: 533. *diög* to receive (534. *diog* to pass from hand to hand, transmit, same word); 535. *tsiang* to take, bring: 536. *tsük* to catch, seize: 537. *ts'æg* to take, pick: 538. *ts'og* to grasp, hold: 539. *sia* to harvest: 540. *ziæg* to take: 541. *siög* to take, collect, gather, harvest.

542. *liæg* all: 543. *liung* a crowd, many, all: 544. *diæg* (a group:) a clan, family: 545. *d'ióg* a group, flock, party; comrade: 546. *tsóng* a clan; ancestors etc.: 547. *dz'ung* to crowd, crowded: 548. *tsiék* to accumulate, collect, many; *tsiég* provisions: 549. *dz'uk* bundle, crowd, group, clan: 550. *dz'óg* group, flock, partner, plural mark.

551. *šög* small quantity, little: 552. *siog* small: 553. *siog* little, few.

554. *t'iang* bow case: 555. *t'ák* sheath of bamboo: 556. *d'uk* a case, sheath: 557. *t'óg* sword case, sheath: 558. *šög* sword case, sheath.

559. *diog* bird of prey, kite, falcon: 560. *tiög* eagle: 561. *dz'ióg* eagle, vulture.

562. *d'iók* flute: 563, 564. *d'ieg* flute: 565. *siög* to blow, whistle: 566. *siög* flute.

567. *tsiêng* flag, banner: 568. *liak* flag, banner.

569. *tak* to reach, obtain: 570. *d'æg* to reach: 571. *tog* to reach.

572. *tsiak* to go to: 573. *dz'ióg* to go to.

574. *tsák* to make, do, act: 575. *dz'óg* to make.

576 勺 577 酌 578 匙 579 匙 580 州 581 酢 582 挑 583 酹 584 醺 ○ 585 斥  
586 逐 ○ 587 止 588 島 589 州 590 洲 ○ 591 趙 592 遼 593 迢 ○ 594 箭 595  
宋 596 贖 597 市 598 售 599 翟 ○ 600 帚 601 婦 602 掃 ○ 603 騰 604 踊 605  
躍 606 跳 607 超 ○ 608 蚤 609 蟲 ○ 610 請 611 祝 612 咒 613 祝 614 衛 615  
討 ○ 616 軸 617 周 618 週 ○ 619 啖 620 嘲 621 譙 622 笑 ○ 623 嫖 624 醜  
○ 625 伺 626 遼 627 驚 628 癡 629 蟲 ○ 630 是 631 之 632 茲 633 斯 ○ 634  
傲 635 肇 636 始 ○ 637 賈 638 袋 ○ 639 箱 640 筍 ○ 641 孀 642 敵 643 擊  
○ 644 漳 645 糟 ○ 646 堡 647 緇 648 朔 649 早 650 皂 ○ 651 稻 652 櫻 653  
栗 ○ 654 再 655 雙 ○ 656 恥 657 羞 ○ 658 役 659 徑 ○ 660 碩 661 變 ○  
662 射 663 弋 664 矯 ○ 665 撻 666 爪 667 蚤 668 撻 669 騷 ○ 670 肘 671 袖  
672 手 ○ 673 昨 674 昔 ○ 675 則 676 即 ○ 677 招 678 召 679 誘 ○ 680 證  
681 徵 ○ 682 孰 683 曙 ○ 684 植 685 獨 ○ 686 動 687 惶 688 掉 689 搖 ○  
690 駢 691 逃 692 盜 693 趙 ○

## B

576. *điok* spoon, ladle: 577. *l̃iok* (to ladle a cup full:) to fill a cup of wine, to pledge: 578. *điẽg* spoon, ladle: 579. *điog* ladle: 580. *đióg* to fill a cup, to pledge (a host pledging a guest); 581. *dz'ák* to fill a cup, to pledge (a guest pledging the host): 582. *t'iog* big ladle; 583. *tsiog* to fill a cup and drink it: 584. *tsiog* (to ladle out wine:) libation sacrifice.

585. *l̃'iak* to drive, expel: 586. *d'iók* to drive, expel.

587. *l̃iæg* islet: 588. *tog* island: 589, 590. *l̃ióg* islet.

591. *t'iek* far off, distant: 592. *điog* far off, distant: 593. *d'iog* far off, distant.

594. *điók* to sell: 595. *d'io*k to buy grain: 596. *điuk* to trade, to deal: 597. *điæg* market, fair: 598. *đióg* to sell, to buy: 599. *t'iog* to sell grain.

600. *l̃ióg* broom: 601, 602. *sóg* to sweep.

603. *d'əng* to jump: 604. *đung* to jump, leap: 605. *điok* to jump, skip, leap: 606. *d'iog* to jump, skip, leap: 607. *t'iog* to leap, skip.

608. *l̃ióng* grasshopper: 609. *d'ióng* insects, vermin.

610. *ts'ięng* to request, pray, seek; 611. *l̃iók* to pray to: 612, 613. *l̃ióg* imprecation: 614. *tóg* to pray: 615. *t'óg* to ask for, to seek.

616. *d'iók* a roller, a pivot: 617. *l̃ióg* a circle, all round: 618. *l̃ióg* a circle, a revolution, a year.

619. *l̃'iæg* to laugh: 620. *tóg* to deride, to ridicule; 621. *dz'iog* to ridicule, to scold: 622. *sio*g to laugh.

623. *l̃'iæg* ugly: 624. *l̃'ióg* ugly.

625. *t'ung* stupid: 626. *t'ũng* stupid: 627. *tũng* stupid: 628. *t'ięg* stupid: 629. *l̃'ięg* stupid.

630. *điẽg* this: 631. *l̃iæg* him, her, it; 632. *tsiæg* this; 633. *sĩẽg* this.

634. *l̃'iók* to begin: 635. *d'iog* to begin; 636. *sĩæg* to begin.

637. *t'ák* bag, sack: 638. *d'æg* bag, sack.

639. *sĩang* hack of a car, box: 640. *sĩæg* square box.

641. *tiék* (a *vis-à-vis*, a partner, an equal:) principal wife: 642. *d'iek* (a *vis-à-vis*;) adversary, opponent, enemy: 643. *đióg* (a *vis-à-vis*;) adversary, opponent, enemy; to answer back.

644. *tsiæg* dregs: 645. *tsóg* dregs.

646. *d'æg* to blacken the eyebrows: 647. *tsiæg* black; 648. *şák* 1st day of the moon; North (the fundamental sense, therefore, must be 'dark'): 649. *tsóg* early morning: 650. *dz'óg* black.

651. *d'óg* rice; 652. *tsiək* millet: 653. *sĩuk* millet, grain (generally).

654. *tsæg* twice, a second time: 655. *şũng* two, a pair, both.

## B

656. *t'iaq* shame: 657. *siôg* shame.  
 658. *diək* forced labour, expedition: 659. *diog* forced labour, expedition.  
 660. *diak* great: 661. *diək* great.  
 662. *d'iak*, *d'iaq* to shoot with bow and arrow: 663. *diək* arrow with string attached; 664. *tsəng* arrow with string attached.  
 665. *d'iek* to scratch; 666. *tsŏg* nail, claw: 667. *tsôg* to scratch; a flea; 668. *sôg* to scratch with the nails: 669. *sôg* to rub a horse.  
 670. *tiôg* arm, elbow; 671. *dziôg* sleeve: 672. *siôg* hand, arm.  
 673. *dz'ák* yesterday: 674. *siak* yesterday, previously, long ago.  
 675. *tsək* then, thereupon: 676. *tsiak* then, thereupon.  
 677. *liog* to call, beckon: 678. *d'iog* to call, summon; 679. *dziôg* to call, allure, entice.  
 680. *liəng* to verify, prove, testify, evidence: 681. *tiəng* to verify, prove, testify, evidence.  
 682. *diók* who, which: 683. *d'ióg* who?  
 684. *d'ək* alone, single: 685. *d'uk* alone, single.  
 686. *d'ung* to move: 687. *d'ung* moved, excited: 688. *d'iog* to shake: 689. *diog* to shake.  
 690. *t'ieŋg* to run, gallop: 691. *d'og* to run, to run away: 692. *d'ôg* a run-away, a bandit: 693. *d'iog* to run, hasten.

## C. WORDS OF TYPE N-NG.

1 溺 2 理 ○ 3 壤 4 農 ○ 5 諾 6 苦 ○ 7 聆 8 耳 ○ 9 攘  
 10 掠 11 捫 12 撈 13 揀 ○ 14 量 15 料 ○ 16 朗 17 亮 18 烙 19 璫  
 20 瞭 21 燎 ○ 22 力 23 勞 ○ 24 輶 25 輓 26 較 27 輓 28 輅 ○ 29  
 樂 30 祿 ○ 31 苓 32 籠 33 麓 ○ 34 撓 35 擾 36 繞 ○ 37 滾 38 零  
 39 瀝 40 漉 41 露 42 雷 43 溜 ○ 44 圖 45 牢 ○ 46 戮 47 劉 ○ 48  
 繞 49 扭 50 紐 51 縲 ○ 52 校 53 菱 ○ 54 能 55 耐 ○ 56 量 57 仍  
 ○ 58 良 59 令 60 靈 ○ 61 陵 62 壘 ○ 63 涼 64 冷 65 凌 ○ 66 膿  
 67 濃 68 醞 ○ 69 浪 70 潦 71 流 ○ 72 乃 73 而 ○

1. *lak* veins in stone and mineral: 2. *liəg* veins in stone and mineral.  
 3. *niəng* fertile and arable soil, worked soil: 4. *nông* to work the soil, agriculture.  
 5. *nāk* (like that, thus, *sic.*) yes, to say yes: 6. *niak* to resemble, like, as, according to.  
 7. *lieng* to hear: 8. *niəg* ear.

## C

9. *ńiang* to grasp, seize, snatch: 10. *gliang*, *gliak* to grasp, seize, snatch: 11. *něk* to grasp, seize: 12. *log* to seize, take out: 13. *liog* to grasp, take.

14. *liang* to measure: 15. *liog* to measure.

16. *láng* bright, clear: 17. *gliang* bright, clear: 18. *glák* to burn: 19. *liok* lustre, brilliancy (of gems): 20. *liog* bright, clear (said of eyes): 21. *liog* torch, to blaze, burn, shine, bright.

22. *liak* force, strength: 23. *log* to use force, to toil.

24. *liang* a car (the explanation »a pair» i. e. two-wheeled car is a folk etymology, as shown by the existence of cognate words »car«): 25. *gliang* a car where there is place to lie down: 26. *liang* to crush under car wheels: 27. *liok* to crush under car wheels: 28. *glág* chariot.

29. *lák* joy: 30. *luk* happiness.

31. *lieng* basket: 32. *lung* basket: 33. *luk* basket.

34. *nóg* to disturb, to trouble: 35. *ńiog* to disturb, to trouble: 36. *niog* to trouble, molest.

37. *ńiang* to drip, dew: 38. *lieng* dropping rain, to drip: 39. *liek* to drip, soak: 40. *luk* to drip, soak: 41. *glág* dew: 42. *lióg* opening in the roof (of the ancient house) for allowing rain water to drip down; to drip: 43. *lióg* to drip.

44. *lieng* prison: 45. *lóg* a fold, enclosure, prison.

46. *gliók* to kill: 47. *lióg* to kill, slay.

48. *ńiog* to tie, wind round: 49. *ńióg* to tie, twist: 50. *ńióg* to tie, a knot: 51. *liog* to tie, twist, coil.

52. *läng* square piece of wood, angle, angular, edge, corner, lozenge-shaped: 53. *liang* (the lozenge-shaped fruit:) water-chestnut.

54. *näng* be able to, can: 55. *nag* capable of, to endure, bear (55. sometimes used for 54., e. g. in *Li ki: Li yün*).

56. *näng* of old, anciently: 57. *ńiang* as of old, as before.

58. *liang* good: 59. *liěng* good: 60. *lieng* wonderful, divine.

61. *liang* mound, tumulus: 62. *liung* mound, tumulus.

63. *gliang* cold: 64. *lieng* cold (the dialects point to an Arch. *lěng*): 65. *liang* ice.

66. *nóng* (thick fluid:) pus, matter: 67. *ńiung* thick, rich (fluid): 68. *ńiung* strong, rich (wine).

69. *láng* waves: 70. *log* torrent, flood: 71. *lióg* to flow.

72. *nag* then, thereupon: 73. *ńiag* then, thereupon.<sup>1)</sup>

<sup>1)</sup> The word 72. Anc. *nái*, Arch. *nag* I have studied in my article »The pronoun *kūe* in the Shu king» (Göteborgs Högskolas Årsskrift 1933). In classical script 72. serves regularly for two words,

## D. WORDS OF TYPE P -NG.

1 棚 2 棚 3 蓬 4 覆 5 幘 6 盲 7 氓 8 冥 9 瞑 10 瞢 11 蒙  
 12 瞢 13 夢 14 幪 15 幕 16 幪 17 塤 18 幕 19 膜 20 眈 21 昌 22 帽  
 23 霧 24 默 25 墨 26 黑 27 煤 28 溟 29 溟 30 第 31 旁 32  
 傍 33 膀 34 傍 35 螃 36 房 37 虻 38 井 39 竝 40 朋 41 副 42 陪 43 明  
 44 望 45 烹 46 炳 47 病 48 烽 49 爆 50 曝 51 卜 52 累 53  
 炮 54 庖 55 燠 56 炸 57 白 58 帛 59 伯 60 目 61 眸 62 兵  
 63 鋒 64 蜂 65 峯 66 剝 67 芒 68 鉈 69 蟲 70 萌 71 苗 72 彫 73  
 旆 74 毛 75 旄 76 芒 77 博 78 丕 79 茫 80 滂 81 龐 82 蓀 83  
 防 84 屏 85 軒 86 邦 87 封 88 障 89 擄 90 棒 91 搏 92 拍 93 擗  
 94 撲 95 秉 96 柄 97 捧 98 奉 99 倭 100 搏 101 拏 102 拏 103 摸 104 擘  
 105 擘 106 擘 107 派 108 剖 109 瓶 110 缶 111 甌 112 杯 113 觥  
 114 紡 115 縛 116 保 117 包 118 袍 119 袍 120 經 121 北 122 背 123 背 124  
 信 125 負 126 脩 127 平 128 杆 129 牌 130 碑 131 鈞 132 崩 133 匄 134  
 踞 135 伏 136 服 137 仆 138 服 139 服 140 顧 141 顧 142 飄 143 暈 144  
 蟆 145 胚 146 胞 147 駁 148 和 149 彪 150 脬 151 鯢

1. *b'äng* awning, shelter, shed: 2. *pěng* shelter, awning: 3. *b'ung* mat cover, awning, sail: 4. *p'îók* to cover: 5. *b'îuk* cover for the head, head-towel, turban, cap; 6. *mǎng* blind: 7. *mǎng* (»the stupid ones», *yü min*.) the common people: 8. *mieng* (sun covered:) darkness, dark: 9. *mieng* to shut the eyes, bad sight: 10. *mäng* darkened, stupid, ignorant: 11. *mung* to cover; ignorant: 12. *mung* a film over the pupil, blind, ignorant: 13. *mung* (shut eyes:) to sleep, dream: 14. *mung* a cover, head-towel: 15. *miek* to cover with a towel: 16. *miek* to cover, a veil: 17. *miek* to cover with plaster: 18. *mág* (a cover:) veil, curtain: 19. *mág* membrane covering a muscle: 20. *mog* dim-sighted: 21. *móg* to cover, veil, cap: 22. *móg* a cap: 23. *müj* fog, mist.

24. *mək* black, dark, silent: 25. *mək* ink (made from soot): 26. *χmək* black: 27. *mwəg* soot-black, ink; coal.

Anc. *nái* 'then, thereupon' and Anc. *nái* 'your'. In the former sense the bronze inscriptions mostly have another character, yet 72. sometimes serves also in this sense of 'then' in Archaic script as well, e. g. in the O hou ting inscr. (K'i ku shi ki kin wen shu k 2, p. 7).

B. Schindler, in *Asia Major* 1933, has published a kind of «criticism» of my above-mentioned article. It is really discouraging to find that he studies Arch. grammatical particles by adducing examples right and left from all kinds of texts without discrimination and without suspecting an important fact which I proved a decennium ago (On the authenticity and nature of the Tso chuan): that the use of the grammatical particles was not at all the same in all Arch. texts but that marked differences existed, based on different dialects. Moreover, a good part of his Shu king examples are drawn from the *spurious* Shu king chapters!

## D

28. *mieng* drizzle: 29. *mung*: drizzle.

30. *pwǎng* (be at the side of:) to assist, help: 31, 32. *b'wǎng* side, beside: 33. *b'wǎng* sides of the body, loins: 34. *b'wǎng* to walk beside, accompany: 35. *b'wǎng* (»side-walker«:) crab: 36. *b'iwang* side-room: 37. *b'ǎng* crab: 38. *piěng* side by side, two together, abreast: 39. *b'ien* side by side, two together, abreast: 40. *b'ang* companion, associate, friend; a pair: 41. *p'ǐk* an associate, assistant: 42. *b'wəg* (to be at the side of:) to accompany, to second, aid.

43. *mǎng* bright, luminous, clear: 44. *mǐwang* full moon.

45. *p'ǎng* to boil, fry: 46. *piǎng* to blaze, flame, luminous: 47. *b'ǎng* (fever:) sickness: 48. *p'jung* to burn, to blaze, beacon: 49. *b'ok* to burn: 50. *b'ok* to dry in the sun: 51. *puk* to burn tortoise shell for divination: 52. *b'og* scorching heat: 53. *b'og* to fry: 54. *b'og* kitchen: 55. *piog* leaping flames: 56. *b'ig* to steam, to heat.

57. *b'āk* white: 58. *b'āk* white silk: 59. *pāk* (the white one, white-haired:) old man, eldest, eldest brother etc.

60. *mǐok* eye: 61. *mǐog* pupil of the eye.

62. *piǎng* a pointed weapon: 63. *p'jung* point of a weapon, sharp point: 64. *p'jung* wasp, bee, hornet: 65. *p'jung* point of a mountain, peak: 66. *p'io* sharp point, to pierce: 67. *mǎng* point of grass, awn: 68. *mǐwang* sharp point of a weapon: 69. *mǎng* gadfly: 70. *mǎng* sprouts: 71. *mio* sprouts.

72. *piog* long hair; 73. *mǎng* long-haired: 74. *mog* hair: 75. *mog* yak's tail used as a flag: 76. *mog* grass covering the earth (like hair), herbs, edible herbs etc.

77. *pāk* wide, vast: 78. *p'ig* wide, vast, great; 79, 80. *mǎng* wide, vast: 81. *mǎng* wide, vast: 82. *mio* vast as sea.

83. *b'iwang* rampart, embankment, to guard, protect: 84. *piěng* to screen, protect, *b'ien* protecting wall, screen: 85. *b'ien* screened carriage: 86. *pǔng* (walled territory:) state, country: 87. *piung* frontier wall, boundary, fief: 88. *b'ig* parapet, wall.

89. *b'ǎng* to beat, fustigate: 90. *b'ǎng* cudgel, to beat: 91. *pāk* to beat: 92. *p'āk* to beat: 93. *b'iek* to beat the breast: 94. *p'uk* to beat.

95. *piǎng* to grasp, hold: 96. *piǎng* a handle: 97. *p'jung* to hold with both hands: 98. *b'jung* to hold in both hands, receive, present: 99. *b'jung* (what is received:) salary: 100. *pāk* to grasp: 101, 102. *b'ǎg* to grasp; 103. *māk* to take in the hand, grasp, feel.

104. *pāk* to cleave, split: 105. *p'iek* to cleave, split: 106. *b'iek* to open: 107. *p'eg* (to cleave:) to bifurcate, to branch (flowing water): 108. *p'üg* to cleave, split.



## D

109. *b'ien* jug, vase, bottle: 110. *p'ôg* earthenware jar, jug, pot, bottle: 111. *p'ûg* jar, pot: 112. *pwæg* cup. (The Fang yen defines 110. by 111. and 109. as a small 111.).

113. *peng* to tie, bind, wrap, swaddle: 114. *p'iwang* to bind, twist, spin: 115. *b'iwak* to tie, bind: 116. *pôg* (to swaddle:) to protect, guard (the same char. enlarged by rad. 145 means 'swaddling clothes'): 117. *pôg* to wrap: 118. *b'ôg* (a wrapper:) a long robe: 119. *b'ôg* to enfold, embrace; 120. *mæk* to bind, a cord.

121. *pæk* (back side:) North: 122. *pwæg* back; behind: 123, 124. *b'wæg* to turn the back, turn round: 125. *b'ïü*g to carry on the back.

126. *pâng* flat board, tablet: 127. *b'ïäng* level, flat, even: 128. *b'ïäng* to plane: 129. *b'æg* flat board, tablet: 130. *p'ïeg* stone tablet, stele: 131. *b'ôg* to plane.

132. *pæng* mountain collapsing, land-slip, to collapse: 133, 134. *b'wæk* to fall to the ground, fall prostrate: 135. *b'ïük* fall to the ground, fall prostrate: 136. *b'ïük* to throw down, subdue, throw oneself down, submit: 137. *p'ïug* to fall prostrate.

138, 139. *p'ïog* whirl-wind: 140, 141. *p'ïog* whirl-wind: 142. *b'ïog* whirl-wind (these readings in the Ts'ie yün ms. from Tun-huang, Stein coll., London).

143. *mäng* toad: 144. *mäg* frog, toad.

145. *p'wæg* foetus, embryo: 146. *p'ôg* placenta.

147. *pök* streaked horse, streaked: 148. *pög* (striped animal:) leopard: 149. *p'ïog* stripes of a tiger, stripes, streaked.

150. *p'ôg* bladder: 151. *b'ïog* fish's air bladder.

152 匏 153 瓢 ○ 154 便 155 覆 156 報 ○ 157 步 158 辨 ○ 159 頁 160 葉 161  
 降 ○ 162 模 163 摹 164 貌 165 描 ○ 166 芥 167 馥 ○ 168 洒 169 迫 170 逼  
 ○ 171 複 172 倍 ○ 173 買 174 賣 175 貿 ○ 176 福 177 富 ○ 178 謨 179 媒  
 180 謀 ○ 181 漂 182 浮 ○ 183 訪 184 聘 ○ 185 豐 186 華 187 丰 ○ 188 培

152. *b'ôg* gourd: 153. *b'ïog* gourd (cognate to 150, 151: bladder-shaped?)

154. *b'ïök* to turn, return, go back: 155. *p'ïök* to turn over, capsize: 156. *pôg* (to return:) to give back, requite, recompense, report etc.: 154. *b'ïôg* (reverting:) again.

157. *mwek* wheat, barley: 158. *m'ïog* barley.

159. *miek* to strive for, to seek: 160. *mäg* to long for, to seek: 161. *m'ïog* to covet.

162. *mäg* model, pattern: 163. *mäg* follow a pattern: 164. *mög* form, shape: 165. *m'ïog* to trace according to a pattern, to depict.

166. *p'iwang* fragrant: 167. *b'ïök* fragrant.

## D

168. *pák* to press: 169. *pāk* to press: 170. *pjak* to press.  
 171. *pjók* double: 172. *b'wəg* double.  
 173. *məg* to buy: 174. *məg* to sell: 175. *mug* to buy and sell, trade.  
 176. *pjūk* happiness, prosperity: 177. *pjüg* wealth.  
 178. *māg* to scheme, to plan: 179. *mwəg* (schemer, planner:) a marriage go-between: 180. *mjüg* to scheme, to plan.  
 181. *p'ioḡ* to float: 182. *b'iōḡ* to float.  
 183. *p'iwang* to enquire: 184. *p'iēng* to enquire.  
 185. *p'iōng* luxuriant, rich, ample, fine: 186. *pung* luxuriant, rich (growth): 187. *p'iung* luxuriant, fine.  
 188. *b'ūg* a small mound: 188. *b'wəg* to earth up a plant (make a small mound around).

## E. WORDS OF TYPE K -N.

|       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 乾   | 2 九   | 3 還   | 4 圍   | 5 寰   | 6 盤   | 7 環   | 8 卷   | 9 圈   | 10 桮  | 11 拳  |
| 12 圓  | 13 圓員 | 14 環  | 15 圓  | 16 環  | 17 鉉  | 18 困  | 19 袞  | 20 鞬  | 21 困  | 22 軍  |
| 23 運  | 24 罩  | 25 衛  | 26 回  | 27 迴  | 28 歸  | 29 圍  | 30 尫  | 31 盤  | 32 乾  | 33 乾  |
| 34 早  | 35 睨  | 36 燿  | 37 炫  | 38 煨  | 39 渴  | 40 煇  | 41 煥  | 42 煥  | 43 煥  | 44 煥  |
| 45 煥  | 46 煥  | 47 煥  | 48 煥  | 49 煥  | 50 煥  | 51 煥  | 52 煥  | 53 煥  | 54 煥  | 55 煥  |
| 56 煥  | 57 煥  | 58 煥  | 59 煥  | 60 煥  | 61 煥  | 62 煥  | 63 煥  | 64 煥  | 65 煥  | 66 煥  |
| 67 煥  | 68 煥  | 69 煥  | 70 煥  | 71 煥  | 72 煥  | 73 煥  | 74 煥  | 75 煥  | 76 煥  | 77 煥  |
| 78 煥  | 79 煥  | 80 煥  | 81 煥  | 82 煥  | 83 煥  | 84 煥  | 85 煥  | 86 煥  | 87 煥  | 88 煥  |
| 89 煥  | 90 煥  | 91 煥  | 92 煥  | 93 煥  | 94 煥  | 95 煥  | 96 煥  | 97 煥  | 98 煥  | 99 煥  |
| 100 煥 | 101 煥 | 102 煥 | 103 煥 | 104 煥 | 105 煥 | 106 煥 | 107 煥 | 108 煥 | 109 煥 | 110 煥 |
| 111 煥 | 112 煥 | 113 煥 | 114 煥 | 115 煥 | 116 煥 | 117 煥 | 118 煥 | 119 煥 | 120 煥 | 121 煥 |
| 122 煥 | 123 煥 | 124 煥 | 125 煥 | 126 煥 | 127 煥 | 128 煥 | 129 煥 | 130 煥 | 131 煥 | 132 煥 |
| 133 煥 | 134 煥 | 135 煥 | 136 煥 | 137 煥 | 138 煥 | 139 煥 | 140 煥 | 141 煥 | 142 煥 | 143 煥 |
| 144 煥 | 145 煥 | 146 煥 | 147 煥 | 148 煥 | 149 煥 | 150 煥 | 151 煥 | 152 煥 | 153 煥 | 154 煥 |
| 155 煥 | 156 煥 | 157 煥 | 158 煥 | 159 煥 | 160 煥 | 161 煥 | 162 煥 | 163 煥 | 164 煥 | 165 煥 |

1. *kwān* a crank, to turn round, to wind: 2. *g'wān* rolling object, ball: 3. *g'wan* revolve, return: 4. *g'wan* revolve, surround: 5. *g'wan* surrounding wall: 6. *g'wan* to wind the hair into a knot: 7. *g'wan* a ring, to surround: 8. *kiwan* a roll, a scroll: 9. *g'iwan* enclosure, *k'iwan* circle, encircle: 10. *k'iwan* round wooden bowl: 8. *g'iwan* curved: 11. *g'iwān* (hand made round:) fist: 12. *giwan* round: 13. *giwan*, *giwān* jade

## E

ring: 14. *giwǎn* (enclosure:) garden, park: 15. *g'iwen* to encircle, wind round, bind: 16. *g'iwen* tripod handle rings: 17. *k'wən* surrounded, enclosed, pressed: 18. *kwən* dress embroidered with curled dragons: 19. *kwən* to revolve smoothly (a wheel): 20. *k'iwen* round granary: 21. *kiwən* troupe, army (escorting footmen surrounding the war chariot; so the character): 22. *giwən* to revolve: 23. *giwən* a halo round the sun or the moon: 24. *giwad* (to surround:) to escort, guard: 25. *g'wər* to revolve, a circuit, come back, return, a turn: 26. *g'wər* eddy: 27. *kiwər* to return: 28. *giwər* to surround; 29. *ngwǎn* to cut round (cut off corners so as to make a thing round); 30. *·wǎn* round bowl: 31. *·wǎt* a crank, to turn round, to wind.

32. *kǎn* dry, *g'ian* (sunshine:) Heaven: 33. *g'ǎn* drought, dry: 34. *g'ian* dawn, beginning sunshine: 35. *kwǎn* to make fire by a burning mirror: 36. *g'iwen* light, dazzling: 37. *g'wən* light, fire, flames: 38. *k'ǎt* (dry:) thirsty: 39. *giwər* blazing, red as fire; 40. *ǎn* dry, hot, parched: 41. *xiwǎn* to dry in the sun, heat, light: 42. *xiən* dawn, beginning sun-shine: 43. *xiən* brightness, heat: 44. *xiwar* to make fire by a burning mirror: 45. *xiər* dawn, to dry in the sun: 46. *xwər*, *xwǎr*, fire: 47. *xiwər*, *xiwar*, *xwǎr* fire, to blaze, burn: 48. *xiwər* bright, blazing; 49. *·wən* warm: 50. *·ǎt* to suffer from heat: 51. *·wər* fire in a brazier.

52. *k'ian* to attach: 53. *kwǎn* band holding together the hair (Shuo wen), cap: 54. *kiwǎn* string which ties up a sleeve: 55. *k'iwǎn* to attach: 56. *g'iwən* bindings of a harness: 57. *kǐən* to tie tightly: 58. *g'ien* string: 59. *g'ien* bow string: 60. *kwən* cord, girdle: 61, 62. *k'wən* to tie together: 63. *kwǎt* to bind: 64. *kiet* to tie, a knot: 65. *kied* top-knot of hair: 66. *kied* (»anknüpfen«) to connect, continue: 67. *kwət* to tie: 68. *g'wət* tassel: 69. *giwet* well-rope: 70. *kwǎr* to bind: 71. *giwər* woof thread.

72. *g'iat* to exhaust, finish: 73. *kǐət* to finish, end, stop, reach to: 74. *kəd* to end, finish, reach to: 75. *kǐəd* end of a season, last: 76. *kǐəd* to end, finished: 77. *kǐəd* to end, finish, reach to; 78. *xiət* to reach to.

79. *kǎn* fornication, to deceive: 80. *kan* fornication, to deceive: 81. *g'wǎn* to cheat, trick, magic: 82. *g'wet* deceitful: 83. *kiwat* deceitful: 84. *kwǎd* deceitful; 85. *xiwǎn* deceitful; 86. *ngan* counterfeit, false: 87. *ngǐən* deceitful.

88. *kiwat* swift horse: 89. *k'wad* swift, quick.

90. *giwǎn* distant, go away: 91. *giwǎt* pass away, pass over, transgress: 92. *giwər* distant, pass away, transgress.

93. *g'át* how, what, why?: 94. *k'ǐər* how?: 95. *·ǎn* how?: 96. *·ian* how?

97. *k'wǎn* broad, wide, magnanimous: 98. *k'wǎt* broad, wide, magnanimous.

99. *k'ən* intense feelings, earnestly: 100. *k'wən* intense feelings, earnestly: 101. *kəd* intense feelings, suppressed feelings.

## E

-102. *k'iat* to beg: 103. *kād* to beg: 104. *g'iar* to beg, to pray.

105. *g'ian* to lift: 106. *kat* to tuck up the skirt: 107. *k'iat* to lift: 108. *k'iat*, *g'iat*, *k'iad* to lift: 109. *xiān* to lift: 110. *xiān* to lift up and present.

111. *k'en* to gnaw: 112. *g'wat* to gnaw: 113. *ngiat* to gnaw.

114. *k'wān* a hole: 115. *kiwan* a dug ditch, canal: 116. *k'iwāt* a hole in a wall, opening, gate: 117. *g'iwāt* to make a hole, *g'iwat* to dig, excavate: 118. *g'iwet* hole, pit, cave: 119. *k'wat* hole, pit, cave: 120. *kwat* to dig, make a pit: 121. *·wān* to scoop out, dig: 122. *·wat* to dig, excavate: 123. *·iwat* to dig out (e. g. the eyes of a person).

124. *kwān* officer, official: 125. *g'wan* officer, official: 126. *k'iwān* chief, prince: 127. *giwen* officer, governor.

128. *k'ān* to look, see: 129. *kian* to look, see: 130, 131. *g'ian* become visible, appear: 132. *kwān* to look, regard: 133. *k'iwān* to regard, love etc.: 134. *g'ian* (to be seen, appear:) have audience; 135. *xian* visible, manifest, display: 136. *xiar* to regard; 137. *ngen* eye.

138. *giwān* to say, to have said: 139. *giwāt* to say: 140. *g'wad* talk, speech, words: 141. *giwad* to say; 142. *ngiān* to talk: 143. *ngian* a saying, proverb; 144. *·iāt* to tell, report.

145. *·ien* oppressed, anxious, zealous: 146. *·iwat* oppressed, anxious: 147. *·iwār* awe, to fear: 148. *·iwār* awe-inspiring.

149. *kwān* reed, pipe, flute: 150. *g'wān* sedge: 151. *k'wad* reed: 152. *giwār* reed.

153. *·iān* bend, bend down: 154, 155. *·wān* the wrist: 156. *·wan* to bend, curve: 157. *·wan* a bend, a bay: 158, 159. *·iwān* (bending:) soft, yielding, docile: 160. *·iwān* crooked, a wrong: 161. *·iwar* to bend down, crooked: 162. *·wār* a bay.

163, 164, 165. *g'wān* confused, turbid: 166. *kwat* confused, turbid.

167. *giwān* a fragrant herb; 168. *xiwān* fragrant: 169. *xiwān* onions and other strong-smelling food stuffs: 170. *xiwān* reeking of liquor: 171. *xiwān* smoke: 172. *g'iwad* fragrant orchid; 173. *·ien* smoke.

174. *k'iad* to stop, rest: 175. *xiāt* to stop, rest: 176, 177. *·āt* to stop, rest.

178. *·ān* peace, tranquillity: 179. *·an* peace, tranquillity: 180, 181. *·ian* at ease, feast.

182. *g'en* threshold: 183. *k'wān* threshold: 184. *k'iwāt* threshold.

185. *g'ān* bar, bolt: 186. *g'iān* bar, bolt: 187. *kwan* bar, bolt.

188. *g'wan* market wall: 189. *giwān* wall; 190. *ngiwān* walled-in premises, courtyard; 191. *·iān* embankment, dyke: 192. *·iwān* (fenced-in area:) park: 193. *·ien* dyke, to dam.

## E

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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 163 混 | 164 涸 | 165 渾 | 166 滑 | 167 芒 | 168 蕪 | 169 葦 | 170 醺 | 171 熏 | 172 蕙 | 173   |
| 烟     | 174 悵 | 175 歇 | 176 遏 | 177 闕 | 178 安 | 179 晏 | 180 燕 | 181 宴 | 182 限 |       |
| 183 相 | 184 板 | 185 閑 | 186 捷 | 187 關 | 188 闌 | 189 垣 | 190 院 | 191 堙 | 192 苑 |       |
| 193 亘 | 194 閑 | 195 間 | 196 閒 | 197 闕 | 198 闕 | 199 架 | 200 希 | 201 稀 |       |       |
| 202 壑 | 203 閑 | 204 閨 | 205 啓 | 206 權 | 207 勻 | 208 均 | 209 鈞 | 210 計 | 211 撰 |       |
| 212 閑 | 213 訓 | 214 困 | 215 茵 | 216 隱 | 217 依 | 218 隱 | 219 衣 | 220 辰 | 221   |       |
| 醫     | 222 醫 | 223 諱 | 224 報 | 225 聖 | 226 侃 | 227 悍 | 228 個 | 229 攔 | 230 健 | 231   |
| 劫     | 232 倡 | 233 傑 | 234 估 | 235 仇 | 236 活 | 237 滑 | 238 壘 | 239 灌 | 240 課 | 241   |
| 浣     | 242 澣 | 243 澣 | 244 潔 | 245 溉 | 246 醴 | 247 介 | 248 鎧 | 249 憫 | 250 歡 | 251   |
| 欣     | 252 按 | 253 印 | 254 軋 | 255 抑 | 256 尉 | 257 尉 | 258 慰 | 259 苑 | 260 蘊 | 261   |
| 苑     | 262 藹 | 263 袁 | 264 裙 | 265 氤 | 266 氲 | 267 飲 | 268 餛 | 269 餛 | 270 餓 |       |
| 271 干 | 272 杆 | 273 杆 | 274 稽 | 275 鍾 | 276 飢 | 277 饑 | 278 恨 | 279 忤 |       |       |
| 280 悵 | 281 怨 | 282 慍 | 283 恩 | 284 愛 | 285 毀 | 286 壞 | 287 咽 | 288 噎 |       |       |
| 289 皆 | 290 諧 | 291 摻 | 292 攀 | 293 援 | 294 輾 | 295 牽 | 296 緯 | 297 據 | 298 摺 | 299   |
| 握     | 300 刊 | 301 券 | 302 虔 | 303 痕 | 304 斤 | 305 割 | 306 戛 | 307 刮 | 308 鉞 | 309 鉞 |
| 310 厠 | 311 害 | 312 膾 | 313 創 | 314 乞 | 315 劇 | 316 梨 | 317 契 | 318 剗 | 319 剗 | 320 刈 |
| 321 剗 | 322 近 | 323 箴 | 324 幾 | 325 捐 | 326 拏 | 327 棄 | 328 遺 | 329 燕 | 330   |       |
| 飢     | 331 筋 | 332 腴 | 333 賈 | 334 撰 |       |       |       |       |       |       |

194. *kǎn* interstice, interval: 195. *g'ǎn* (interval in time:) leisure: 196, 197. *kǎn* (to peep through a crevice:) to peep, spy; 198. *xiēn* crevice, interstice, disaccord, feud.

199. *xān* rare, sparse, few: 200. *xiēr* rare, sparse, few: 201. *xiēr* sparse, thin.

202. *k'ān* to open up new soil: 203. *k'ār* to open: 204. *k'ār* to open: 205. *k'iar* to open.

206. *g'iwan* steelyard, to weigh with a steelyard: 207. *giwēn* equal, even: 208, 209. *kiwēn* equal, equalize, in balance.

210. *kiār* to reckon, calculate: 211. *g'iwēr* to reckon, calculate, measure.

212. *g'ǎn* to train, teach, exercise: 213. *xiwān* to teach.

214. *iēn* to base oneself upon, rely on, because of etc.: 215. *iēn* support, cushion: 216. *iēn* to lean upon: 217. *iār* to lean upon, rely upon.

218. *iēn* to conceal, hide, cover, screen: 219. *iār* (covering:) clothes: 220. *iār* a screen: 221. *iār* a screen: 222. *iār* cataract over eye; 223. *xiwār* to conceal, hide, taboo.

224. *kēn* hard-broken soil, hard, difficult: 225. *kien* hard, firm.

226. *k'ān* strong-minded, bold, straightforward: 227. *g'ān* energetic, courageous: 228, 229. *g'ǎn* strong, energetic, martial: 230. *g'iǎn* strong, robust: 231. *k'at*

## E

energetic: 232, 233. *g'iat* strong, martial, heroic: 234. *g'iet* strong, robust; 235. *ngiat* strong, martial.

236. *g'wät* moist (as opp. to dry), living, to live etc.: 237. *g'wet* slippery.

238. *kwän* (to pour water over:) to wash the hands: 239. *kwän* to pour water, to water, to wash: 240. *kwän* to pour out wine, libation: 241, 242. *g'wän* to wash: 243. *kiwen* clean: 244. *kiat* clean, to cleanse: 245. *kəd* to pour water, wash; 246. *xwəd* to wash the face.

247. *käd* scales, armour: 248. *k'ər* armour.

249. *g'än* glad, pleased; 250. *xwän* glad, pleased: 251. *xiən* glad, pleased.

252. *än* to press down, lay hand on: 253. *·iən* (to press down:) to seal, a seal: 254. *·at* to press down under the wheels, to crush: 255. *·iet* to press down, repress (*·iet* as shown by Shī rimes; the same character is also used for a synonymous word *·iek*): 256. *·iwät* (to press:) to iron linen: 257. *·iwəd* to press down, subdue, pacify: 258. *·iwəd* to pacify, soothe, to comfort.

259. *·iwän* rich vegetation, luxuriant: 260. *·iwən* rich vegetation, luxuriant: 261. *·iwät* rich vegetation, luxuriant: 262. *·äd* rich vegetation, luxuriant.

263. *giwän* long robe: 264. *giwən* skirt.

265. *·iən* aura: 266. *·iwən* aura.

267. *xäd* spoilt tainted food; 268. *·iad* spoilt tainted food: 269. *·iəd* spoilt tainted food: 270. *·iwäd* spoilt tainted food.

271. *kän* shield: 272. *g'dän* to ward off, protect.

273. *k'iet* to investigate, examine: 274. *kiər* to investigate, examine.

275. *g'ien* famine: 276. *kier* famine: 277. *kier* famine.

278. *g'en* to hate, angry: 279. *ngiat* aversion; 280. *·iwan* angry: 281. *·iwän* to hate, resentment: 282. *·iwən* to hate, resentment.

283. *·ən* love: 284. *·əd* love.

285. *xiwar* to destroy: 286. *g'wer* to destroy.

287. *·ien* throat, to swallow: 288. *·iet* food sticking in the throat, to choke.

289. *ker* all: 290. *g'er* all together, in union, harmony.

291, 292. *g'ian* to pull out, seize: 293. *giwän* to pull out, draw, drag, seize: 294. *giwän* (»pullers») cart shafts: 295. *k'ien* to haul, drag, lead: 296. *k'ien* tow-rope, to haul: 297, 298. *kiwən* to take, pick up; 299. *·at* to pull up.

300. *k'dän* to cut: 301. *k'iwän* (a cut notch:) notch, tally, bond, deed: 302. *g'ian* to cut, kill (char. used *kia tsie*): 303. *g'en* (a cut:) scar: 304. *kiən* (cutter:) axe: 305. *kät* to cut: 306. *ket* lance: 307. *kwät* cut off, scrape off: 308. *giwät* halberd: 309. *k'iat* sickle, to cut: 310. *giwät* to incise: 311. *g'äd* (to cut:) to injure: 312. *kwäd*

## E

to cut meat to pieces, to mince: 313. *kwád* cut off: 314. *kwád*, *kjəd* to cut, to wound: 315. *kjwád* sharp, to cut, to wound: 316, 317. *k'iad* to cut, a notch: 318. *kər*, *ngər* scythe, sharp, to sharpen; 319. *ngwăt*, *ngjwăt*, *ngwət* to amputate, cut off the feet: 320. *ngjäd* to mow, cut: 321. *ngjäd* to amputate, cut off the nose.

322. *g'ien* close, near: 323. *g'jər* (close quarters:) Royal domain proper: 324. *kjər* near (in the common expression »*ki hu*«).

325. *giwăn* to throw away: 326. *giwən* to drop, to lose: 327. *k'jəd* to throw away: 328. *giwer* to leave behind, lose.

329. *ian* swallow: 330. *at* swallow.

331. *kjan* sinew: 332. *g'jăn* ends of a sinew.

333. *kwán* to perforate, pass through: 334. *g'wan* to perforate, pass through.

## F. WORDS OF TYPE T-N.

1 緣 2 紕 3 紕 4 紕 5 紕 6 紕 7 紕 8 紕 9 紕 10 紕 11 紕  
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 934 紕 935 紕 936 紕 937 紕 938 紕 939 紕 940 紕 941 紕 942 紕 943 紕  
 944 紕 945 紕 946 紕 947 紕 948 紕 949 紕 950 紕 951 紕 952 紕 953 紕  
 954 紕 955 紕 956 紕 957 紕 958 紕 959 紕 960 紕 961 紕 962 紕 963 紕  
 964 紕 965 紕 966 紕 967 紕 968 紕 969 紕 970 紕 971 紕 972 紕 973 紕  
 974 紕 975 紕 976 紕 977 紕 978 紕 979 紕 980 紕 981 紕 982 紕 983 紕  
 984 紕 985 紕 986 紕 987 紕 988 紕 989 紕 990 紕 991 紕 992 紕 993 紕  
 994 紕 995 紕 996 紕 997 紕 998 紕 999 紕 1000 紕

1. *djwan* border band (on dress), along the edge, along, sequel, cause: 2. *djwan* silk thread: 3. *d'iet* band of hemp worn on mourning dress: 4. *tjwat*, *tjwad* to tie, fasten, sew; (»anknüpfen«): connect, continue: 5. *tád* band round the waist, girdle: 6. *djwər* a string, to tie: 7. *tswán* red string, to tie together, compile: 8. *tswán*

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(«anknüpfen»:) continue: 9. *dziwən* silk cord, to bind: 10, 11. *sjan* cord, thread: 12. *sien* band round the waist, girdle: 13, 14. *sjat* to tie, fasten.

15. *twán* to cut to pieces: 16. *twán* (cut short:) short: 17. *twán*, *d'wán* to cut off: 18. *d'wán* (a cut-off piece:) section, piece, slice: 19. *d'wán*, *liwan* to cut to pieces: 20. *diwan* to mince meat: 21. *tiēt* sickle, to cut grain: 22. *liad* to cut, trim, restrain, regulate: 23. *liad* to cut: 24. *t'iar* to cut hair: 25. *t'iar* to cut grass; 26. *ts'án* to cut, cut off: 27, 28. *tsian* to cut, clip: 29. *ts'wən* to cut to pieces: 30. *dz'iat* to cut off: 31. *dz'iwat* to cut off: 32. *tsiet* section: 33. *ts'iet* to cut: 34. *tsiar* to mince: 35. *dz'iar* to cut, to trim: 36. *dz'iar* to cut grain; 37. *san* to cut.

38. *twán* point, tip, end: 39. *diwad* pointed, sharp: 40. *liwər* pointed, sharp, awl, tip; 41. *tsian* arrow: 42. *tsian* a hoe: 43. *tsiwan* to pierce, engrave, incise; 44. *siwən* (points:) bamboo shoots: 45. *sjar* arrow. (This group may be cognate to the preceding).

46. *lian*, *sjan* pregnant: 47. *san* to bear.

48. *sjar* to die: 49. *sjar* corpse.

50, 51. *t'ien* to laugh: 52. *sien* to laugh: 53. *d'iet* to laugh.

54. *tán* true, sincere: 55. *lien* true, sincere: 56. *sien* true, believe, faith: 57. *siwən* true, sincere.

58. *diwat* to examine: 59. *ts'at* to examine.

60. *ts'ien* close, intimate, love etc.: 61. *ts'ien* inner coffin (closest to the body): 62. *ts'ien* inner garments.

63. *tswən* high as a mountain, lofty: 64. *dz'iwat*, *tsiwəd* mountain peak: 65. *ts'wər*, *dz'wər* high, lofty, precipitous: 66. *sün* mountain: 67. *siwən* high, steep, lofty.

68. *d'ien* to destroy, annihilate: 69. *dz'án* to murder, kill, destroy.

70. *sán* to scatter: 71. *sát* to scatter.

72. *tsän* wine cup: 73. *dz'án* libation cup.

74. *d'án* to strip, doff, take off clothes, lay bare: 75. *tian* pellicule, to peel off: 76. *t'wát* to peel off, strip, doff, undress; 77. *siwad* cast off skin (as reptiles).

78. *li'wan* to bore through, to pierce: 79. *tswán* to bore, awl.

80, 81. *twən* mound, heap: 82. *twər* mound, heap.

83. *t'ien* to reach to, catch up: 84. *d'əd* to reach, catch up: 85. *liəd* to arrive, reach to, go to: 86. *tiəd* to cause to go (causative to 85.); 87. *tsien* to arrive, reach to.

88. *dz'ian* to advance, precede, before: 89. *tsien* to advance, bring forward: 90. *tsien* to advance: 91, 92. *dz'ien* to bring forward as a present, a gift: 93. *tsiad* to bring forward in sacrifice, to sacrifice: 94. *tsiar* to bring forward as a present, a gift; 95. *sien* to advance, precede, before.



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96. *l'iwət* to come out, bring out, out: 97. *t'iwət* to eliminate, degrade.  
 98. *tsjən* to ford, a ford: 99. *tsiər* to ford, a ford.  
 100. *t'wən* to swallow, gulp down, devour: 101. *ts'án* to swallow, gulp down, devour: 102. *ts'wad* to devour (swallow a whole slice of meat in one mouthful).  
 103. *d'iat* to seize: 104. *l'iat* to grasp, lay hold of: 105. *twát* to pluck, take, grasp: 106. *d'wát* to snatch, carry off, take by force; 107. *ts'wan* to take by force, grab: 108. *tswən* to pinch, lay hand on: 109. *ts'wát* to pinch, pick, gather: 110. *ts'iat* to snatch, steal: 111. *dz'wət* to grasp, seize.  
 112. *tjan* to tread, trample: 113. *djwan* heel, to trample; 114. *dz'jan* to tread, trample: 115. *dz'wən* to kick, trample: 116. *dz'wət* to trample: 117. *ts'iar* to tread, trample.  
 118. *d'iwən* to follow, obey, accord with: 119. *d'iwət* to follow: 120. *tjwər* to follow after; 121. *dzjwən* to follow in death: 122. *tsiwən* to follow, obey, accord with: 123. *dzjwən* to follow, accord with: 124. *dzjwən* (obeying:) docile, tamed (horse): 125. *dzjwəd* to follow; 126. *swən* (follower:) grandson: 127, 128. *šjwət* to follow; (cause to follow:) to lead: 127, 128. *šjwəd* leader.  
 129. *t'wər* to push; 130. *dz'wər* to push, press, thrust: 131. *ts'wər* to push, to urge.  
 132. *djwan* quickly, to hasten: 133. *d'wət* quickly, suddenly, rush out: 134. *t'wád* fleet horse, to run swiftly; 135. *tsiwən* fleet horse: 136. *tsiwən* quick-witted, intelligent, gifted: 137. *ts'wət* abruptly; 138. *sjən* quick.  
 139. *d'wən* pig: 140. *t'wət* pork fat.  
 141, 142. *djət* to let loose, escape, relieve, leisure; 143. *tsjər* to let loose, unrestrained, licentious; 144. *sjat* to let out water, leak, disperse: 145. *sjat* to let out water, leak, relieve, disperse; *zjad* to disperse: 146. *zjad* to let out water, let loose, relieve, leisure.  
 147. *t'iar* dripping from the eye, tears: 148. *t'iar*, *djər* dripping from the nose, nasal mucus; 149. *sjəd* nasal mucus.  
 150. *d'wən* to collect, to mass; a group of soldiers, a camp, to camp: 151. *d'wəd* a group of soldiers, a regiment: 152. *dz'wád* to collect, to assemble, accumulate: 153. *dz'iwəd* to collect, numerous, dense, thicket.  
 154. *l'jan* property; 155. *tsjər* property.  
 156. *dzjwad* broom; 157. *šjwat* to brush, to scrape clean: 158. *šjwad*, *šjwət* towel, kerchief: 159. *šjwət* towel, kerchief.  
 160. *tán* grieved, distressed: 161. *d'wán* grieved, distressed: 162. *d'wən* grieved, sad: 163. *tát* grieved, distressed: 164. *tjwat* grieved, sad: 165. *l'jwar* sad, anxious;

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166. *ts'wət*, *dz'iwəd* grieved, sad: 167. *ts'iar* grieved, distressed; 168. *siwət* pained, grieved, to pity.

169 紕 170 尙 ○ 171 戰 172 鍛 173 頓 174 摸 175 捷 176 扶 177 抵 178 抵 179  
 挺 180 碓 181 挫 182 桂 183 椎 184 碓 ○ 185 攤 186 誕 187 闌 188 挺 189 延  
 190 筵 191 演 192 陳 193 陣 194 引 195 示 196 申 197 伸 198 肆 ○ 199 躡 200  
 跌 201 躡 202 躡 203 躡 ○ 204 腦 205 腎 206 腿 ○ 207 燁 208 燁 209 前 210  
 211 餵 212 餵 213 餵 214 煖 215 燄 ○ 216 敦 217 諄 ○ 218 炭 219 衫 220  
 型 ○ 221 田 222 畛 ○ 223 銓 224 忖 225 寸 226 揣 227 算 ○ 228 戰 229 顫  
 230 振 231 震 232 電 ○ 233 灌 234 浚 235 濬 236 邃 237 秩 238 第 239 第 240  
 梯 241 梯 242 次 ○ 243 係 244 輟 245 竣 246 卒 ○ 247 撤 248 遂 249 遂 250  
 還 ○ 251 獸 252 醉 ○ 253 纘 254 纘 ○ 255 賤 256 仝 257 肩 258 細 ○ 259  
 彈 260 展 261 輟 262 纏 263 纏 264 適 265 團 266 搏 267 轉 268 傳 269 棟 270  
 紛 271 旋 272 旋 273 波 274 蛟 275 藩 276 徇 277 旬 278 巡 279 昨 280 宣 281  
 躑 282 歲 ○ 283 坦 284 壇 285 堦 ○ 286 咒 287 屏 ○ 288 迭 289 替 ○ 290  
 準 291 水 ○ 292 大 293 大 294 泰 ○ 295 蟬 296 螭 297 蛭 ○ 298 單 299 禪 300  
 但 301 禮 302 擅 303 專 ○ 304 滿 305 汎 306 洗 307 洒 ○ 308 損 309 衰 ○  
 310 旦 311 晨 312 暎 ○ 313 填 314 瑣 315 窒 ○ 316 達 317 徹 ○ 318 丹 319  
 旂 320 紹 321 茜 322 績 323 紫 ○ 324 齊 325 妻 326 儕 ○ 327 術 328 隧 ○  
 329 遁 330 趣 331 退 332 遠 333 遜 ○ 334 鮮 335 新 ○ 336 折 337 脬 338 碎  
 ○ 339 舌 340 誓 341 說 ○ 342 墜 343 墮 ○ 344 斂 345 鐫 ○ 346 鈇 347 杙  
 ○ 348 瘡 349 疾 350 瘵 351 瘵 ○ 352 盡 ○ 353 軼 ○

169. *d'iet* to sew: 170. *t'iar* to sew, embroider.

171. *t'ian* to fight, battle: 172. *tuán* to hammer, to forge: 173. *tuán* to beat the head against the floor: 174. *d'ien* to beat, to drum: 175. *t'át* to beat, flog: 176. *t'iet* to beat, flog: 177. *t'iar* to butt, resist: 178. *t'iar* to knock against, resist: 179. *tuár* to throw: 180. *tuár* pestle: 181, 182. *t'iwár* to beat: 183. *d'iwár* to beat, hammer, pestle.

185. *t'án* to extend, spread: 186. *d'án* to extend, enlarge, large, exaggerate: 187. *t'ian* to enlarge, open out: 188. *t'ian* drawn out, long: 189. *dian* to extend, spread out, prolong etc.: 190. *dian* (what is spread out:) mat: 191. *dian* to expand, extend: 192. *d'ien* to spread out in a row, arrange: 193. *d'ien* a troupe spread out in a row, array: 194. *dien* to draw out, stretch; lead etc.: 195. *d'iar* (to spread out:) make known, exhibit, proclaim, announcement, presage; 196. *sién* to extend, expand, make known, repeat etc.: 197. *sién* to extend, stretch out: 198. *siar* to extend, spread out, display etc.

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199. *tien* to stumble: 200. *d'iet* to stumble: 201. *t'át*, 202, 203. *tjær* to stumble.  
 204. *djwan* calf of the leg: 205. *d'wæn* rump, buttocks: 206. *t'wær* leg, thigh, ham.  
 207. *t'jan* to burn, to cook: 208. *t'wæn* colour of fire, *d'wæn* torch for burning divination shell; 209. *tsjan* to roast, fry: 210. *ts'wân* to make fire, burn, cook: 211, 212. *dz'wan* cooked food: 213. *tsjwæn* fire-prepared, cooked food: 214. *tswæn*, *tsiwæn*, *ts'wæt* to make fire, burn: 215. *dziwäd* to ignite, draw fire.  
 216. *twæn* firm, solid: 217. *îjwæn* (to make solid:) inculcate.  
 218. *t'ân* coal: 219. *îjæn* black clothes: 220. *îjæn* black hair.  
 221. *d'ien* cultivated field: 222. *îjæn* raised borders of the fields.  
 223. *ts'jwan*: 224. *ts'wæn* to calculate, measure: 225. *ts'wæn* inch: 226. *ts'jwar* to measure, estimate: 227. *swân* to calculate, estimate, reckon.  
 228, 229. *îjan* to tremble, shiver, shake: 230. *îjæn* to shake: 231. *îjæn* shock of thunder, shake: 232. *d'ien* (vibration in atmosphere:) lightning, thunder.  
 233. *ts'wær* deep: 234, 235. *sijwæn* deep: 236. *sijwäd* deep.  
 237. *d'jæt* order, series, degree, rank: 238. *d'jær* order, series, sequence, degree: 239. *d'jær* (the next one, the second as opp. to the first:) younger brother: 240. *d'jær* younger sister: 241. *t'jær* steps (in sequence), stairs: 242. *ts'jær* order, sequence, the next one, the second.  
 243. *t'jad* to stop, finish (Ch'u dialect): 244. *tjwat* to stop, finish: 245. *ts'jwæn* to stop, finish: 246. *tsjwät* to stop, finish, die.  
 247. *t'jat*, *d'jat* to remove: 248. *djad* to go away, pass away, die: 249. *d'iad* to go away: 250. *ts'jan* 'to go away, remove'.  
 251. *îjwat* to drink: 252. *tsjwäd* drunk.  
 253. *îjæn* fine and tight textile: 254. *d'jäd* fine and tight textile.  
 255. *dz'jan* petty, cheap, mean: 256. *ts'iar* small, petty: 257. *sjat* small, trifling, petty: 258. *sjar* small, fine, thin.  
 259. *d'ân* bullet, to shoot with bullet: 260. *tjan* to unroll, open out, turn round: 261. *tjan* to turn round: 262. *d'jan* to wind round, wrap up: 263. *d'jan* to go round, revolution of a celestial body, path etc.: 264. *d'jan* to turn round (Ch'u dialect): 265. *d'wân* round: 266. *d'wân* to roll round: 267. *tjwan* to revolve, turn round: 268. *d'jwan* (to circulate:) to hand over from one to another, transmit: 269. *d'jwan* round spars, rafters (r o u n d, see Tso chuan, Huan 14th year, comm.): 270. *îjæn* to twist, revolve: 271. *dziwan* to turn round, revolve: 272. *dziwan* whirl-wind: 273. *dziwan* circling water: 274. *dziwan* snail: 275. *dziwan* sphere: 276. *dziwæn* all round: 277. *dziwæn* a cycle of 10 days: 278. *dziwæn* to go round, patrol: 279. *tswäd* (a com-

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plete cycle:) a complete year: 280. *siwan* to revolve, go everywhere, to pass round, circulate, proclaim: 281. *siən* to whirl, pirouette: 282. *siwad* a cycle, a year.

283. *t'ân* level, even, flat: 284. *d'ân* altar: 285. *đian* cleared (levelled, flat) open area (for sacrifices).

286. *dziər* rhinoceros: 287. *siər* rhinoceros.

288. *d'iet* (to substitute one for another:) to alternate, change: 289. *t'ied* to substitute, change, instead of.

290. *tiwən* a water level: 291. *siwər* water.

292. *d'ād* great: 293, 294. *t'ād* great.

295. *đian* cicada; 296. *dz'ien* small cicada: 297. *tsat* small cicada.

298. *tân* single, alone, only: 299. *tân* single, unlined dress: 300. *d'ân* single, alone, only: 301. *tian* single (not double, e. g. mat): 302. *đian* to act alone, on one's own responsibility, dictatorial: 303. *tiwan* single, alone, special, particular.

304. *tsian* to wash: 305. *siən* to throw water over, sprinkle: 306. *siən* to wash the feet: 306, 307. *siər* to wash: 307. *ser* to throw water over, sprinkle.

308. *swən* to diminish: 309. *siwər* to diminish.

310. *tân* dawn, morning: 311. *đian*, *d'ien* dawn, morning: 312. *t'wən* sun just rising.

313. *d'ien* to block, fill up, stop up: 314. *t'ien*, *tiən* ear-stopper: 315. *tiət*, *tiet* to block, fill up, stop up.

316. *d'ât* to penetrate, pass through, communicate, everywhere: 317. *d'iat*, *t'iat* to penetrate, pass through, communicate, everywhere.

318. *tân* cinnabar, red: 319. *tiän* red banner: 320. *tsiən* light red silk, red: 321. *ts'ien* Rubia, red-colouring stuff: 322. *ts'ien* red-coloured silk: 323. *tsiar* purple silk, purple.

324. *dz'ier* uniform, equal, even: 325. *ts'ier* wife of first rank (equal, mate): 326. *dz'er* group of equals, category, class, company.

327. *d'iwət* road, way; method etc.: 328. *dziwəd* road, way; tunnel.

329, 330. *d'wən* to draw back, retire, skulk, flee: 331. *t'wər* to draw back, withdraw, retire: 332. *ts'iwən* to draw back, shrink: 333. *swən* to recede, give way, yield.

334. *sian* fresh, new: 335. *siən* new.

336. *tiät* to break, snap, *d'iat* fracture: 337. *ts'iwəd* easy to break, brittle: 338. *swəd* to break into pieces, fragments.

339. *d'iat* tongue: 340. *điad* a speech, pronouncement, declaration: 341. *siwat* to speak, explain, *siwad* to speak to.

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342. *d'iwəd* to fall down, collapse: 343. *d'wər* to fall down, collapse.  
 344. *d'wər* metal butt on spear shaft: 345. *dz'wən* metal butt on spear shaft.  
 346. *d'iad* fetters on the feet: 347. *īiēt* fetters on the feet.  
 348. *tien* sickness, ill; 349. *dz'iet* sickness, ill: 350. *tsəd* sickness, ill: 351. *tsiər* sickness, ill.  
 352. *tsiən* to exhaust: 352. *dz'ien* exhausted, empty.  
 353. *d'iet*, *diet* a car passing another.

## G. WORDS OF TYPE N- N.

1 赧 2 然 3 燃 4 烜 5 煖 6 煖 7 熬 8 熬 9 日 10 泥 11 爛  
 ○ 12 鍊 13 煉 14 烈 ○ 15 聯 16 連 17 綸 18 倫 19 緯 20 累 21 纍  
 22 縲 23 紉 ○ 24 縲 25 刺 26 棘 27 刃 28 裂 29 厲 30 礪 31 利 32  
 犁 33 耒 34 刃 ○ 35 賴 36 利 ○ 37 踣 38 躡 39 履 ○ 40 鄰 41 和  
 42 昵 43 暱 44 尼 45 邇 ○ 46 輓 47 嬖 ○ 48 孺 49 孺 50 冽 51 漂

1. *nan* (hot in the face:) to blush, ashamed: 2, 3. *nian* to burn, roast: 4, 5. *nuán* hot, warm: 6. *nuán* hot water: 7. *níat* hot, heat: 8. *níwat* to burn, to heat: 9. *níet* sun, sun heat: 10. *níər* (hot in the face:) to blush, ashamed; 11. *glán* heated through, well-cooked etc.: 12, 13. *glian* to smelt, refine: 14. *liat* burning, flaming, bright.

15, 16. *lian* to string together, connect, join: 17. *liwən* silk strings: 18. *liwən* ties, human relationships: 19. *siwət* rope, cord: 20, 21. *liwər* to tie, bind, string: 22. *liwər* to tie, bind, string; 23. *nien* to thread, string.

24. *liwan* (*bliwan*?) to slice, slice: 25. *lát* to cut: 26. *lát* (cutting:) sharp, pungent: 27. *liat* (to cut apart:) to divide, distribute: 28. *liat* to cleave, split: 29, 30. *liəd* (sharpener:) whetstone: 31. *liəd* sharp: 32. *liər* («cleaver, cutter») plough: 33. *lwər* plough; 34. *nien* edge, blade.

35. *lād* profit, benefit: 36. *liəd* profit (probably same stem as the preceding group: the cuttings, the harvest).

37, 38. *liən* to tread, trample: 39. *liər* to tread, trample, a shoe.

40. *liən* near, neighbour: 41. *níet* clothes nearest to the body: 42, 43. *níat* near: 44. *níər* near: 45. *níar* near.

46. *níwan* weak, soft: 47. *nuwən* weak, soft.

48. *liəd* oyster: 49. *liəd* oyster.

50. *liat* cold: 51. *liet* cold.

## H. WORDS OF TYPE P -N.

1 翻 2 翩 3 奮 4 扮 5 飛 6 蹣 7 蹣 8 般 9 拚 10 撥  
 11 潑 12 發 13 被 14 廢 15 費 16 播 17 駢 18 嬖 19 匹 20 比 21  
 此 22 嬖 23 妃 24 配 25 北 26 采 27 辨 28 辯 29 片 30 篇 31 半  
 32 判 33 胖 34 班 35 板 36 版 37 扁 38 分 39 別 40 伐 41 刑 42 仞  
 43 判 44 勿 45 辦 46 絆 47 編 48 幘 49 紵 50 紉 51 紉 52 纓 53  
 絡 54 坊 55 粉 56 叁 57 拂 58 悖 59 譯 60 聞 61 味 62  
 貝 63 拜 64 憤 65 悲 66 悶 67 逆 68 閑 69 兇 70 怖 71 扮 72  
 捫 73 繁 74 纒 75 紡 76 素 77 芥 78 菜 79 辭 80 苾 81 緋 82  
 蜚 83 不 84 尤 85 喘 86 匪 87 非 88 末 89 茂 90 勿 91 未 92  
 慢 93 愧 94 瞞 95 惛 96 惛 97 民 98 眠 99 昏 100 暗 101 悵 102 悵  
 103 殍 104 昧 105 忽 106 昧 107 昧 108 疾 109 昧 110 迷 111 輻 112 藩 113  
 臆 114 閑 115 韜 116 筆 117 市 118 弔 119 款 120 第 121 第 122 敵 123 閑 124  
 閑 125 庀 126 弔 127 扉 128 扉 129 悞 130 墮 131 門 132 閤 133 幘 134 密 135  
 本 136 莢 137 拔 138 蹣 139 肺 140 鼻 141 泌 142 溺 143 敗 144  
 敝 145 弊 146 斃 147 畢 148 墻 149 墳 150 蕪 151 肥 152 邊 153 偏  
 154 瀆 155 曼

1. *p'wǎn* to fly: 2. *p'ien* to fly: 3, 4. *piwǎn* to fly: 5. *piwǎr* to fly.

6. *b'wǎn* animal's foot, paw: 7. *b'wǎt* foot, heel, trample, march.

8. *puǎn* to transport away, distribute etc.: 9. *p'wǎn* throw away (dialectal word): 10. *puǎt* to spread, distribute, scatter, transfer, throw away, dismiss: 11. *p'wǎt* to throw, spill: 12. *piwǎt* to throw out, launch, send out, issue: 13. *p'iwǎt* to throw out bad influences, expel: 14. *p'iwǎd* to throw away: 15. *p'iwǎd* (to throw away:) to spend, to waste: 16. *puǎr* to spread out, sow; throw away.

17. *b'ien* two horses abreast, a pair: 18. *b'ien* mate, wife: 19. *p'iet* mate: 20. *b'iet*, *b'ier*, *piar* (a pair, two together:) to bring together, compare etc.: 21. *piar* (mate of the father:) deceased mother: 22. *p'ier* mate: 23. *p'iwǎr* mate, wife: 24. *p'wǎr* to mate, match.

25. *b'ien* female (of animals): 25. *b'ier* female (of animals) — possibly cognate to the preceding group: the mate of the male animal.

26. *b'ǎn* to separate, distinguish, discriminate: 27. *b'ǎn*, *b'ian* to divide, distinguish, discriminate: 28. *b'ian* to distinguish, discriminate, argue: 29. *p'ian* cleft wood, splint, slice, slip, board, tablet: 30. *p'ian* (cleft wood:) writing tablet: 31. *puǎn* divide in half, half: 32. *p'wǎn* to cleave, divide, discriminate: 33. *p'wǎn* one half of a victim divided in two parts: 34. *puan* to distribute: 35, 36. *puan* board:

## H

37. *pīen* board, tablet, flat: 38. *pīwən* to divide, *b'īwən* a part: 39. *pīat*, *b'īat* to cleave, separate, divide: 40. *b'īwāt* to cut, attack: 41. *b'īwət* to cut, attack: 42. *p'īər* to separate, part: 43. *b'īwər* to cut off the feet, amputate; 44. *mīwən* to cut, cut the throat.

45. *b'īan* to twist cord: 46. *pwān* (to tie:) fetter, hobble: 47. *pīen* to tie together: 48. *b'īwən* cords on horse's bit: 49, 50. *pīwət* rope: 51. *pīwət* silk band: 52. *pīər* (cords:) reins, bridle: 53. *mīən* cord, string.

54. *b'īwən* dust: 55. *pīwən* (powdered:) flour: 56. *pīwən* to dust: 57. *p'īwət* to dust.

58, 59. *b'wād*, *b'wət* disorderly, rebellious.

60. *mīwən* to hear, to smell (perceive by the s e n s e s): 61. *mīwəd* to taste, taste:

62. *pād* cowry shell, valuables: 63. *pwād* (to bring cowry shells as presents, present valuables:) to salute (this primary sense of »pai» is revealed by the earliest bronze inscriptions which show a man presenting strings of cowries).

64. *b'īwən* to grieve: 65. *pīər* to grieve: 66, 67. *mwən* to grieve: 68. *mīən* to grieve: 69. *mīwən* mourning hair dress: 70. *b'īwət* distressed.

71. *b'īwən* to grasp, seize: 72. *mwən* to grasp, seize.

73. *b'īwān* mixed and numerous, multitudinous: 74. *p'īən* tangled, confused, multitudinous: 75. *pīwən* tangled, confused, multitudinous; 76. *mīwən* tangled, confused.

77. *p'īwən* strong-smelling, fragrant: 78. *b'īwən* fragrant wood, aromatic wood: 79. *b'wət* fragrant: 80. *b'īēt* fragrant: 81. *pīwər* fragrant: 82. *b'īwər* stinking insects.

83. *pwət* not (no such reading in the ancient dictionaries, but indicated by all the dialects): 84. *pīwət* not (with the modal sense of 'not be able to, not be willing to'): 85. *b'īwət* to say no, contradict: 86. *pīwər* not: 87. *pīwər* is not; 88. *mwāt* not (char. used *kia tsie*): 89. *miat* not (char. used *kia tsie*): 90. *mīwət* don't: 91. *mīwəd* not yet.

92. *man* careless, forgetful, negligent: 93. *mwən* careless, forgetful.

94. *mwān* closed eyes, darkened sight: 95, 96. *mīən* darkened intelligence, stupid: 97. *mīən* the common people (the »darkened, stupid ones», »*yü min*» stupid people): 98. *mīen* closed eyes, to sleep: 99. *χmwən* darkness, darkened, darkened intelligence, stupid: 100, 101, 102, 103. *χmwən* dim sight, darkened intelligence: 104. *mwāt* troubled sight: 105. *χmwət* not discerning, stupid, careless: 106. *mwād* troubled sight: 107. *mwād* darkness before dawn: 108. *mīəd* to sleep: 109. *mīər* something in the eye, troubled sight: 110. *mīər* (to blind:) to confuse, lead astray.

## H

111. *p'iwǎn* (a cover:) carriage screen: 112. *p'iwǎn* (cover:) hedge: 113. *b'ǐēn* knee cap (bone which is like a cover, a cap): 114. *piat* to shut a door, close, cover: 115. *piēt* knee cover: 116. *piēt* (cover, screen:) wicker hedge, shutter, small door made of branches: 117, 118, 119. *piwət* knee cover: 120, 121. *piwət* carriage screen: 122. *piad* to cover, conceal: 123. *piad* to shut a door, close, cover: 124. *piəd* to shut a door, shut, covered, hidden, secret: 125. *piəd* to cover, screen: 126. *piwəd* covering, shady: 127. *piwər* (a shutter:) door-leaf: 128. *b'iwər* covered, screened, secret: 129. *mwán* screen, curtain: 130. *mwán* (covering:) plaster on a wall: 131. *mwən* (shutters:) door-leaves, door, gate: 132. *χmwən* gate-keeper: 133. *miat* a cover on the front part of a carriage: 134. *mǐēt* shut off, covered, concealed, solitary, secret, silent.

135. *pwən* lower part of a tree or a plant, stem, root (as opp. to top, branches, ear of grain): 136. *pwát* lower part of a tree or a plant, stem, root; straw (as opp. to ear): 137. *b'wat* to uproot, pull up: 138. *b'wát* lowest part of a vertical object, base, foot, heel, to trample (cf. »*ken*» which means both 'stem, root' and 'heel').

139. *piwǎd* (breathers:) lungs: 140. *b'iad* (breather:) nose.

141. *piəd* to gush forth (as a source): 142. *piwəd* to gush forth.

143. *b'wad* to destroy, ruin, spoil, defeat: 144. *b'iad* to spoil, ruin, wear out: 145. *b'iad* spoiled, bad: 146. *b'iad* (destruction:) death: 147. *piēt* (destroy:) make an end to, to end, finish.

148. *b'iwǎn* grave-mound: 149. *b'iwən* grave-mound.

150. *piwən* fertilizer, ordure, manure: 151. *b'iwər* fat, rich, fertile.

152. *pian* side, edge, border: 153. *p'ian* on one side, oblique: 154. *piēn* (side, edge of the water:) shore, beach.

155. *mwán* long, extended: 155. *mǐwǎn* long, extended.

## I. WORDS OF TYPE K-M.

1 闕 2 黔 3 龔 4 閏 5 閏 6 蓋 7 蓋 8 掩 9 掩 10 奄 11 閏  
 12 黔 13 龔 14 閏 15 閏 16 閏 17 暗 18 黔 19 蔭 20 陰 21 頤 22  
 函 23 街 24 領 25 龔 26 珍 27 頰 28 領 29 拊 30 鉗 31 夾 32 狹  
 33 狎 34 陟 35 鈇 36 扶 37 扶 38 肱 39 脇 40 鹽 41 鹹 42 醃  
 43 飲 44 吸 45 喻 46 飲 47 坎 48 陷 49 珍 50 壓 51 壓 52  
 鉅 53 甲 54 檻 55 輶 56 桺 57 陰 58 龔 59 篋 60 匣 61 爰  
 62 岵 63 岵 64 巖 65 陳 66 峯 67 險 68 瞰 69 監 70 鑑 71 覽  
 72 兼 73 咸 74 協 75 洽 76 裕 77 合 78 會 79 會 80 翕 81 飲 82  
 謙 83 歉 84 欠 85 感 86 撼 87 劍 88 戡



## I

1. *g'iam* (shutter:) gate: 2. *g'iem* dark, black: 3. *k'iem* (covering:) coverlet: 4. *g'ap* (shutter:) door, to close: 5. *kap* (shutter:) inner door (to the harem): 6, 7. *g'ap*, *káb* covering, to cover: 8. *ám* covered, obscured, dark: 9. *iam* to cover, conceal: 10. *iam* to cover, all-covering: 11. *iam* (the man who covers, shuts, keeps the doors of the harem shut, cf. 132 above:) door-keeper, eunuch: 12. *em* dark, black: 13, 14. *iem* to cover, conceal: 15. *em* to cover with earth, bury: 16. *em* to shut a door, shut, closed, covered, dark: 17. *em* darkened sun, dark, darkness: 18. *em* black: 19. *iem* (covering:) shade: 20. *iem* darkness, dark, shade, North side etc. For the connection between 'to cover' and 'dark': 'to shut': 'gate', cf. group H 111—134 above.

21. *g'am* jaws, jowl: 22. *g'am* to hold in the mouth: 23. *g'em* (what is »jawed», bitten:) horse's bit, to hold in the mouth: 24. *g'em* jaws, jowl: 25. *g'em* to hold in the mouth, contain: 26. *g'em* objects put in a corpse's mouth: 27. *kiap* jaws, jowl, cheeks: 28. *g'ap* jaws, jowl (possibly cognate to next group: »pincher» = jaw?).

29. *g'iam* to press from both sides, pinch: 30. *g'iam* (pincher:) iron collar; gyves; pincers: 31. *kap* to grasp from both sides, squeeze, pinch: 32. *g'ap* (pressing from both sides:) narrow: 33. *g'ap* (pressing:) close; intimate: 34. *g'ap* (narrow, pressing from both sides:) chasm, pass: 35. *kiap* pincers: 36. *kiap* pincers, chopsticks: 37. *g'iap* to press from both sides, hold under the arms, clasp under the arm to support; to press, coerce: 38. *k'iaip* to open the sides, to rifle; *k'iwāb* sides of the body, flanks: 39. *χiāp* sides of the body, flanks; to press from both sides, to press, coerce.

40. *g'iam* salt: 41. *g'em* salty, salted: 42. *ngiām* soda (drawn from salty soil).

43. *χap* to suck in, draw in, swallow, drink: 44, 45. *χiap* to suck in, draw in, swallow: 46. *iem* to swallow, drink.

47. *k'am* pit: 48. *g'am* pit, throw or fall into a pit: 49. *k'iem* pit.

50. *ap* to press down: 51. *iap* put down the finger on.

52. *g'am* mail: 53. *kap* scales, mail.

54. *g'am* cage (for wild animals etc.): 55. *g'am* car with cage on: 56. *g'ap* cage (for wild animals etc.): 57. *k'iwāb* pen, enclosure for wild animals.

58. *k'em* to hold, contain, receptacle, box: 59. *k'iap* box, satchel: 60. *g'ap* case, box: 61. *g'iep*, *g'iap* satchel, book box.

62. *k'em* cliff: 63. *k'iem* high, precipitous: 64. *ngam* cliff: 65. *ngiam* high bank: 66. *ngiem* high ridge of cliff: 67. *χiam* high, precipitous, difficult of access, perilous.

## I

68. *k'ám* (*k'lám*?) to see, watch: 69. *klam* to see, examine, inspect: 70. *klam* mirror: 71. *glám* to see, watch.

72. *kiam* (*kliam*?) to join two or several things, bring together, combine, unite, both: 73. *g'em* (several united:) all: 74. *g'iap* to unite, accord, harmony: 75. *g'ep* accord: 76. *g'ep* collective sacrifice (to all ancestors): 77. *g'ap* to join, bring together, unite, accord: 78. *g'wəb* (> *Shī g'wəd* > *Anc. yuái*) to come together, bring together, unite, accord: 79. *kwəb* (to add up:) to make up accounts: 80. *xiəp* to unite, accord, harmony.

81. *k'ám* (to make oneself defective, imperfect:) to humble oneself: 82. *k'iam* to humble oneself: 83. *k'am*, *k'iam* insufficient food, insufficient: 84. *k'iam* deficient (char. used *kia tsie*).

85. *kəm* to move, be moved: 86. *g'am* to move, shake.

87. *k'iam* sword: 88. *k'am* to stab, cut down.

K. WORDS OF TYPES *T-M*, *N-M*, *P-M*.

|       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 鑿   | 2 鏡   | 3 刻   | 4 掘   | 5 鐵   | 6 尖   | 7 錯   | 8 簪   | 9 箴   | 10 鍼  | 11 鉈  |
| 12 插  | 13 鉸  | 14 斬  | 15 芟  | 16 疊  | 17 鑿  | 18 褶  | 19 鑿  | 20 攝  | 21 懾  | 22 懾  |
| 23 懾  | 24 懾  | 25 懾  | 26 懾  | 27 懾  | 28 懾  | 29 懾  | 30 懾  | 31 懾  | 32 懾  | 33 懾  |
| 34 懾  | 35 懾  | 36 懾  | 37 懾  | 38 懾  | 39 懾  | 40 懾  | 41 懾  | 42 懾  | 43 懾  | 44 懾  |
| 45 懾  | 46 懾  | 47 懾  | 48 懾  | 49 懾  | 50 懾  | 51 懾  | 52 懾  | 53 懾  | 54 懾  | 55 懾  |
| 56 懾  | 57 懾  | 58 懾  | 59 懾  | 60 懾  | 61 懾  | 62 懾  | 63 懾  | 64 懾  | 65 懾  | 66 懾  |
| 67 懾  | 68 懾  | 69 懾  | 70 懾  | 71 懾  | 72 懾  | 73 懾  | 74 懾  | 75 懾  | 76 懾  | 77 懾  |
| 78 懾  | 79 懾  | 80 懾  | 81 懾  | 82 懾  | 83 懾  | 84 懾  | 85 懾  | 86 懾  | 87 懾  | 88 懾  |
| 89 懾  | 90 懾  | 91 懾  | 92 懾  | 93 懾  | 94 懾  | 95 懾  | 96 懾  | 97 懾  | 98 懾  | 99 懾  |
| 100 懾 | 101 懾 | 102 懾 | 103 懾 | 104 懾 | 105 懾 | 106 懾 | 107 懾 | 108 懾 | 109 懾 | 110 懾 |

1. *tsám* awl, chisel, to pierce: 2. *dz'am* awl, chisel: 3. *diam* sharp-pointed, sharp: 4. *liam* to pierce: 5. *tsiam* awl, sharp: 6. *tsiam* sharp point, sharp: 7. *tsəm* needle: 8. *tsiam* hair pin: 9, 10. *liəm* needle: 11. *ts'ap* long needle: 12. *ts'ap* to put a spit through, pierce: 15. *səp* chisel, to engrave.

14. *tsam* to cut off, decapitate: 15. *sam* to cut grass, to mow.

16. *d'iap* layer, to fold: 17, 18. *d'iap* dress with two layers of stuff, lined, double; put in layers, to fold: 19. *dziəp* dress with two layers of stuff, lined, double; put in layers, to fold.

20. *liap* to fear, afraid: 21. *d'iap* afraid: 22. *liəp* to fear, afraid: 23. *liəp* to fear, afraid.

## K

24. *siam* slender, thin, fine, small: 25. *sem* slender, delicate.
26. *d'em* to sink in water, deep water: 27. *dz'iem* to go down in the deep, go down in water, lie hidden: 28. *d'am* deep, deep water, abyss: 29. *d'iem* to go down in the deep, sink in water: 30. *d'iam* down in the depths of earth, deep down: 31. *s'iem* deep water, deep.
- 32, 33. *d'am* quiet, peaceful: 34. *d'iam* quiet, peaceful: 35. *t'iap* quiet, peaceful.
36. *tsam* swift: 37. *ts'iem*, *ts'iem* to gallop, run swiftly: 38. *dz'iap* swift: 39. *sap* to gallop, run swiftly.
40. *d'am* to burn: 41. *diam* to blaze, flame: 42. *d'am*, *dz'iem* to burn, to heat: 43. *d'iam* stove: 44. *siam* fever.
45. *s'iap* moist, wet, damp: 46. *dz'iap* marsh.
47. *tiap* to bind, tie: 48. *ts'iap* to bind together.
49. *liam* to look, see: 50. *t'iam* to look, see.
51. *liap* to catch, grasp, seize: 52. *d'iap* to seize, grasp, pick up: 53. *liab* (a »catcher«): bird of prey: 54. *liab* to grasp: 55. *dz'iap* (to catch:) to take booty, quarry, game: 56. *s'iap* to grasp, hold.
57. *d'am* to talk, chat: 58. *liam* to chatter: 59. *d'am* to talk, chat: 60. *d'ap* to chatter: 61. *d'iap* to chatter.
- 62, 63. *tiam* to soak: 64, 65. *tsiam* to soak: 66. *tsiem* to soak; 67. *s'iem* to soak: 68, 69. *ziam* soaking rain.
70. *t'iam* to put to shame, disgrace: 71. *dz'am* shame, to be ashamed.
72. *dz'am* to slander: 73. *dz'iem* to slander.
74. *sam* three: 75. *ts'am* three (persons or things) together, a triad: 76. *s'iem* (the three-star constellation:) Orion.
77. *dz'am* of unequal length: 78. *ts'iem* of unequal length.
79. *d'ap* mixed: 80. *tsiap* to bring together, join: 81. *dz'ap* collected, mixed: 82. *dz'iap* to bring together, gather, collect, mix: 83. *dz'iap* to bring together, gather, harmony: 84. *ts'iap* to collect.
85. *tap* to answer: 86. *twab* (> Shī *twad* > Anc. *tudi*) to answer.
- 87, 88. *nep* (to cause to enter, causative to 90:) to bring in, to present: 89. *nwab* (> Shī *nwad* > Anc. *nudi*) interior, inside, in: 90. *iiap* to enter.
91. *b'iwam* pattern, rule, law, norm: 92. *piwāp* pattern, rule law, norm.

\* \* \*

## LAWS OF ALTERNATIONS.

At a first glance at the word families established above the reader may well ask: is it not extremely farfetched to imagine an etymological connection between words which are so strongly dissimilar phonetically as many of the cases proposed? Is it not unreasonable to combine e. g. A 213 *k'ung*: 225 *χiog*; B. 64 *điang*: 76 *tōk*: 79 *d'æg*; E 93 *g'át*: 94 *k'iar*; E 142 *ngiăn*: 140 *g'wad*; F. 66 *săn*: 65 *dz'wər* — when in all such cases there is n o t o n e consonant or vowel common to the two members of the combination? This objection may seem quite justified. Yet a rash judgment of the kind is not just; all the families proposed must be seen in the light of the general laws of alternations which can be derived from the materials adduced. In the following résumé I shall pick out a number of comparatively safe and convincing examples of those various laws.

*The final consonants.*

Here we have three undeniable series of alternations:

1. *ng* ~ *k* ~ *g*;
2. *n* ~ *t* ~ *d* ~ *r*;
3. *m* ~ *p* ~ *b*.

*ng* ~ *k*:

A 33. *ngiăng*: 34. *ngiăk*; 103. *ngăng*: 106. *ngák*; 118. *k'áng*: 120. *g'ák*; 155. *k'ăng*: 163. *k'ăk*; 172. *kəng*: 175. *g'ăk*; 226. *·iəng*: 227. *·iək*; 229. *kwăng*: 232. *k'wák*; 268. *k'jung*: 270. *k'juk*, 271. *g'juk*; B 69. *təng*, 70. *đ'əng*: 75. *t'ək*; 115. *d'ũng*: 123. *tũk*; 260. *sieng*: 261. *siək*; 269. *điông*: 275. *điók*; 298. *d'əng*: 300. *điək*; 302. *dz'jəng*: 305. *dz'iek*; 322. *săng*: 323. *s'iak*; 387. *d'ung*: 388. *d'uk*; 516. *tsjung*: 523. *tsjuk*; 547. *dz'ung*: 549. *dz'uk*; C 10. *gliang* and *gliak*; 32. *lung*: 33. *luk*; 38. *lieng*: 39. *liek*; D 8,9. *mieng*: 15—17. *miek*; 114. *p'iwang*: 115. *b'iwak*.

*ng* ~ *g*:

A 29. *kăng*: 30. *kæg*; 63. *kông*: 65. *g'óg*; 73. *k'ăng*: 84. *g'jæg*; 92. *g'jăng*: 97. *k'jæg*; 135. *k'jăng*: 137. *g'jæg*; 132. *g'ien*: 133. *g'eg*; B 69. *təng*: 79. *d'æg*; 210. *d'áng*: 213. *l'jag*; 308. *l'jông*: 314. *l'jóg*; 378. *tsăng*: 380. *dz'ág*; 408. *l'jəng*: 416. *l'jag*; 464. *təng*: 465. *d'æg*; 528. *điəng*: 532. *d'jæg*; C 25. *gliang*: 28. *glág*; 54. *nəng*: 55. *næg*; D 84. *p'jəng*, *b'ien*: 88. *b'jæg*; 143. *măng*: 144. *mäg*.

*k* ~ *g*:

A 28. *kók* and *kóg*; 31. *k'ók*: 32. *kóg*; 279. *k'iwak*: 282. *k'iwag*; 290. *·ək*: 294. *·jg*; 318. *k'ək*: 320. *kjg*; 323. *·ák* and *·ág*; 339. *g'ók*: 343. *g'óg*, 342. *kóg*, 340. *kǒg*, *g'ǒg*; 369. *kók* and *kóg*; 22. *điək*: 24. *điæg*; B 29. *d'ák* and *d'ág*; 41. *d'uk*: 42. *d'ũg*; 169. *dz'ək*: 177. *dz'æg*; 168. *ts'jək* and *ts'jæg*; 170. *ts'jək*: 181. *dzjæg*; 235. *d'ók* and *d'óg*; 272. *l'jak* and *l'jag*; 289. *s'ók*: 291. *s'og*, 293. *s'og*; 436. *s'jak*: 437. *s'jag*; 445. *d'jək* and *d'jæg*;

450. *dziak*: 454. *ziag*; 452. *siók*: 456. *siog*; 462. *tsiak* and *tsiag*; 548. *tsiэк* and *tsiэг*; 565. *siók*: 566. *sióg*; 569. *tək*: 570. *d'æg*; 576 *điok*: 579. *djog*; 595. *d'ioк*: 599. *t'ioг*; 594. *djók*: 598. *đióg*; 605. *djok*: 606. *d'ioг*, 607. *t'ioг*; 611. *l'iók*: 612. *l'ióg*; 662. *d'iak* and *d'iaг* 682. *điók*: 683. *d'ióg*; C 1. *lək*: 2. *l'æg*; D 24,25. *mək*: 27. *mwæg*; 49. *b'ok*: 52. *b'og*; 60. *m'ók*: 61. *m'óg*; 104. *pək*: 107. *p'эг*; 121. *pək*: 122. *pwæg*, 123, 124. *b'wæg*; 135. *b'ük*: 137. *p'ug*; 147. *pők*: 148. *pög*; 154. *b'ók* and *b'óg*; 176. *p'ük*: 177. *p'üg*.

*n ~ t*:

E 1. *kwán* and *'wát*; 32. *kán*: 38. *k'át*; 53. *kwán*: 63. *kwát*; 90. *giwán*: 91. *giwát*; 97. *k'wán*: 98. *k'wát*; 105. *g'ian*: 108. *g'iat*; 121. *'wán*: 122. *'wat*; 138. *giwán*: 139. *giwát*; 163. *g'wán*: 166. *kwát*; 226. *k'án*: 231. *k'at*; 230. *g'ian*: 232, 233. *g'iat*; 252. *'án*: 254. *'at*; 253. *'iēn*: 255. *'iēt*; 260. *'iwan*: 261. *'iwat*; 287. *'ien*: 288. *'iet*; 300. *k'án*: 305. *kát*; 329. *'ian*: 330. *'at*; F 10. *sian*: 13. *s'iat*; 27. *tsian*: 30. *dz'iat*; 70. *sán*: 71. *sát*; 108. *tswán*: 111. *dz'wat*; 115. *dz'wán*: 116. *dz'wat*; 118. *d'iwán*: 119. *d'iwat*; 139. *d'wán*: 140. *t'wat*; 160. *tán* and *tát*; 214. *tswán* and *ts'wat*; 245. *ts'iwán*: 246. *ts'iwat*; 314. *t'ien*: 315. *t'iet*; 313. *d'ien*: 315. *tiet*; G 2, 3. *h'ian*: 7. *h'iat*; 4, 5. *nuán*: 8. *h'iwat*; H 27. *b'ian*: 39. *b'iat*; 48. *b'iwán*: 49—51. *p'iwat*; 56. *p'iwán*, 54. *b'iwán*: 57. *p'iwat*; 64. *b'iwán*: 70. *b'iwat*; 78. *b'iwán*: 79. *b'wat*; 94. *muán*: 104. *muát*; 99—103. *χmwán*: 105. *χmwat*; 113. *b'ien*: 115. *p'iet*.

*n ~ d*:

E 12. *giwan*: 24. *giwad*; 105. *g'ian*: 108. *k'iad*; 138. *giwán*: 141. *giwad*; 149. *kwán*, 150. *g'wán*: 151. *k'wad*; 167. *giwán*: 172. *g'iwad*; 283. *'en*: 284. *'əd*; 300. *k'án*: 316, 317. *k'iad*; F. 123. *dziwán*: 125. *dziwad*; 150. *d'wán*: 151. *d'wad*; 214. *tsiwán*: 215. *dziwad*; 234. *siwán*: 236. *siwad*; H 94. *muán*: 106. *muád*; 98. *mien*: 108. *m'iad*.

*n ~ r*:

A series of examples of this alternation has already been given on pp. 20, 27 above. We have furthermore: E 19. *kwán*, 22. *giwán*: 25. *g'wér*, 27. *k'iwér*, 28. *giwér*; 37. *g'wán*: 39. *giwér*; 42. *h'ien*: 45. *h'ier*; 49. *'wán*: 51. *'wér*; 53. *kwán*: 70. *kwár*; 158, 160. *'iwn*: 161. *'iwar*; 202. *k'én*: 203, 204. *k'ér*; F. 2. *điwán*: 6. *d'iwér*; 80. *twán*: 82. *twér*; 89, 90. *ts'ien*: 94. *ts'ier*; 98. *ts'ien*: 99. *ts'ier*; 118. *d'iwán*: 120. *t'iwér*; 205. *d'wán*: 206. *t'wér*; 223. *ts'iwán*: 226. *ts'iwér*; 306. *sién* and *siér*; 308. *swán*: 309. *s'iwér*; 329. *d'wán*: 331. *t'wér*; 345. *dz'wán*: 344. *d'wér*; G 17. *h'iwán*: 22. *h'iwér*; 37, 38. *h'ien*: 39. *h'ier*; H 77. *p'iwán*, 78. *b'iwán*: 81. *p'iwér*, 82. *b'iwér*; 95, 96. *m'ien*: 110. *miér*; 150. *p'iwán*: 151. *b'iwér*.

*t ~ d*:

E 64. *kiet*: 65, 66. *kied*; 73. *k'iet*: 76, 77. *k'ied*; 83. *kiwat*: 84. *kwád*; 88. *kiwat*: 89. *k'wad*; 108. *k'iat*, *g'iat* and *k'iad*; 107. *k'iat*: 108. *k'iad*; 139. *giwát*: 140. *g'wad*, 141. *giwad*; 256. *'iwat*: 257. *'iwad*; 305. *kát*: 311. *g'ád*; 307. *kwát*: 313. *kwád*; 308. *giwát*: 315. *k'iwád*; 309. *k'iat*: 316, 317. *k'iad*; 319. *ng'iwát*: 320. *ng'iad*; F 4. *t'iwat* and *t'iwad*; 64. *dz'iwat* and *ts'iwad*; 127, 128. *s'iwat* and *s'iwad*; 144, 145. *s'iat*: 146. *ziad*; 157. *s'iwat*: 158. *s'iwad*; 166. *ts'wat* and *dz'iwad*; 341. *s'iwat* and *s'iwad*; G 25. *lát*, 27. *liat*: 29, 30. *liad*; H 12. *p'iwát*, 11. *p'wát*: 14. *p'iwád*; 13. *p'iwat*: 15. *p'iwad*; 58, 59. *b'wat*.

and *b'wǎd*; 90. *mǐwət*: 91. *mǐwəd*; 104. *mǔd̄t*: 106. *mǔd̄d*; 114. *piat*: 123. *piad*; 116. *pǐt̄*: 124. *pǐd̄*; 120, 121. *pǐwət*: 126. *pǐwəd*.

*t ~ r*:

E 63. *kwǎt*: 70. *kwǎr*; 102. *k'ǐət*: 104. *g'ǐər*; 146. *ǐwət*: 147, 148. *ǐwər*; F. 64. *dz'ǐwət*: 65. *dz'wər*; 119. *d'ǐwət*: 120. *tǐwər*; 164. *tǐwat*: 165. *ǐiwar*; G 42, 43. *nǐət*: 44. *nǐər*; H 10. *pwǎt*: 16. *pwǎr*; 20. *b'ǐət* and *b'ǐər*; 41. *b'ǐwət*: 43. *b'ǐwər*; 79. *b'wət*: 81. *pǐwər*, 82. *b'ǐwər*; 84. *pǐwət*: 86, 87. *pǐwər*; 120, 121. *pǐwət*: 128. *b'ǐwər*.

*d ~ r*:

E 24. *gǐwad*: 28. *gǐwər*; 247. *kǎd*: 248. *k'ər*; F. 64. *tsǐwad*: 65. *ts'wər*; 236. *sǐwad*: 233. *ts'wər*; G 31. *lǐəd*: 32. *liər*; H. 126. *pǐwad*: 128. *b'ǐwər*.

*m ~ p*:

I 1. *gǐam* 4. *g'ǎp*; 21, 22. *g'ám*: 27. *kiap*; 24—26. *g'əm*: 28. *g'əp*; 29, 30. *g'ǐam*: 37. *g'ǐap*; 52. *g'ám*: 53. *kap*; 54. *g'am*: 56. *g'ap*; 72. *kiam*: 74. *g'ǐap*; 73. *g'em*: 75, 76. *g'əp*; K 34. *d'iam*: 35. *t'ǐap*; 36. *tsám*: 38. *dz'ǐap*; 37. *ts'ǐəm*: 39. *səp*; 57. *d'ám*: 60. *d'ǎp*.

*p ~ b*:

I 38. *k'ǐǎp* and *k'ǐwǎb*; 77. *g'əp*: 78. *g'wəb*; K. 51. *ǐǐəp*: 53, 54. *ǐǐəb*; 87. *nəp*: 89. *mwəb*; 85. *təp*: 86. *twəb*.

For further examples of these alternations of final consonants see pp. 107—110 below.

#### *The initial consonants.*

Here we have first four great series of consonants, the members of which interchange freely in the formation of words from one and the same stem:

1. *k ~ k' ~ g ~ g'*;
2. *t ~ t' ~ d ~ d' ~ ǐ ~ ǐ' ~ d̄ ~ d̄'*;
3. *ts ~ ts' ~ dz ~ dz' ~ tʂ ~ tʂ' ~ dʒ' ~ s ~ ʂ ~ z ~ z'*;
4. *p ~ p' ~ b'*.

Examples:

*k ~ k'*:

A 32. *kôg*: 31. *k'ǐôk*; 37. *kuk*: 36. *k'ǔk*; 79. *kǐung*: 80. *k'ǐung*; 148. *kǐwəg*: 147. *k'ǐəg*; 191. *kǐung*: 190. *k'ung*; 268. *kǐǔng*: 270. *k'ǐuk*; 331. *kek*: 330. *k'wák*; 342. *kôg*: 344. *k'ôg*; E 120. *kwət*: 119. *k'wət*; 129. *kian*, 132. *kwán*: 128. *k'án*; 149. *kwán*: 151. *k'wad*.

*k ~ g*:

A 3. *kwáng*: 6. *gǐwang*; 156. *kwǎng*: 158. *gǐwǎng*; 176. *kwək*: 177. *gǐwək*; 209. *kwǎng*: 212. *gǐwǎng*; 362. *kiôg*: 363. *gǐog*; E 19. *kwən*: 22. *gǐwən*; 208. *kǐwǎn*: 207. *gǐwǎn*; E 315. *kǐwǎd*: 308. *gǐwǎt*.

*k ~ g'*:

A 3. *kwáng*: 4, 5. *g'wǎng*; 98. *kog*: 100. *g'ǐog*; 140. *kǐwang*: 141. *g'ǐwang*; 172. *kəng*:

175. *g'ək*; 237. *kōng*; 238. *g'ung*; 250. *kāng*; 253. *g'iang*; 259. *kūng*; 260. *g'ūng*; 268. *k'ūng*; 271. *g'ūk*; 279. *k'wak*; 278. *g'wāk*; 302. *kog*; 303. *g'óg*; 340. *kōg* and *g'ōg*; 342. *kōg*; 343. *g'ōg*; 347. *kiog*; 346. *g'og*; 357. *kōg*; 358. *g'ōg*; E 1. *kwán*; 2. *g'wán*, 3—7. *g'wan*; 8. *k'wan* and *g'íwan*; 32. *kán* and *g'ian*; 32. *kán*; 33. *g'án*; 57. *k'ien*; 58. *g'ien*; 67. *kwət*; 68. *g'wət*; 108. *k'āt* and *g'iat*; 124. *kwán*; 125. *g'wan*; 129. *kian*; 130. *g'ian*; 149. *kwán*; 150. *g'wán*; 166. *kwət*; 163. *g'wən*; 187. *kwan*; 185. *g'ǎn*; 195. *kǎn* and *g'ǎn*; 238. *kwán*; 241, 242. *g'wán*; 271. *kán*; 272. *g'án*; 276. *k'ier*; 275. *g'ien*; 289. *ker*; 290. *g'er*; 305. *kát*; 311. *g'ád*; 333. *kwán*; 334. *g'wan*; I 31. *kap*; 32—34. *g'ap*; 35, 36. *kiap*; 37. *g'iap*; 72. *kiam*; 74. *g'iap*; 79. *kwəb*; 78. *g'wəb*; 85. *kəm*; 86. *g'əm*.

*k' ~ g*:

E 9. *k'íwan*; 12. *giwan*; 301. *k'íwǎn*; 310. *giwət*.

*k' ~ g'*:

A 77. *k'íwang*; 76. *g'wǎng*; 207. *k'wǎng*; 208. *g'wǎng*; 246. *k'óg*; 247. *g'íóg*; 270. *k'íuk*; 271. *g'íuk*; E 9. *k'íwan* and *g'íwan*; 10. *k'íwan*; 11. *g'íwan*; 102. *k'íət*; 104. *g'íər*; 116. *k'íwǎt*; 117. *g'íwǎt*; 119. *k'wət*; 117. *g'íwət*; 151. *k'wad*; 150. *g'wán*; 226. *k'án*; 227. *g'án*; 300. *k'án*; 302. *g'ian*; I 47. *k'ám*; 48. *g'ǎm*; 59. *k'iap*; 60. *g'ap*.

*g ~ g'*:

A. 6. *giwang*; 4. *g'wǎng*; 22, 23. *giwang*; 21. *g'wǎng*; 58. *giwǎng*; 57. *g'iweng*; 277. *giwang*; 276. *g'wǎng*; 333. *giəg*; 332. *g'əg*; E 39. *giwər*; 37. *g'wən*; I 40. *giəm*; 41. *g'em*.

*t ~ t'*:

B 190, 191. *t'iang*; 192. *t'iang*; 310. *tog*; 312. *t'io*; 614. *tóg*; 615. *t'óg*; 627. *tūng*; 626. *t'ūng*.

*t ~ d*:

B. 248. *tio*; 250. *dio*; 560. *tióg*; 559. *dio*.

*t ~ d'*:

B. 69. *təng*; 79. *d'əg*; 103. *tók*; 104. *d'íók*; 123. *tūk*; 124. *d'ūk*; 134. *tíong*; 135. *d'íong*; 191. *t'iang* and *d'iang*; 248. *tio*; 249. *d'io*; 310. *tog*; 311. *d'og*; 358. *tieng*; 359. *d'ien*; 403. *táng*; 404, 405. *d'áng*; 420. *tíóg*; 417, 419. *d'íóg*; 531. *tək*; 529. *d'ūk*; 569. *tək*; 570. *d'əg*; 641. *tiək*; 642. *d'iek*; F. 17. *twán* and *d'wán*; 180. *twər*; 183. *t'wər*; 261. *tian*; 262, 263. *d'ian*; 267. *t'ian*; 268. *d'íwan*; 298. *tán*; 300. *d'án*; 314. *t'ien*; 313. *d'ien*.

*t ~ i*:

B. 190. *t'iang*; 195. *t'iang*; 248. *tio*; 253. *tio*; 588. *tog*; 589. *tíóg*; 614. *tóg*; 613. *tíóg*; 681. *t'iang*; 680. *t'iang*; F. 86. *t'ied*; 85. *t'ied*; 164. *t'wat*; 165. *t'war*; 216. *twən*; 217. *t'wən*; K 4. *t'iem*; 9. *t'iem*.

*t ~ i'*:

B. 123. *tūk*; 125. *t'íuk*; 190. *t'iang*; 197. *t'iang*.

*t ~ d*:

B. 23. *t'əg*; 24. *d'əg*; 464. *təng*; 466. *d'əg*; F. 112. *tian*; 113. *d'íwan*; 301. *tian*; 302. *d'ian*.

$t \sim d'$ :

B. 69. *təng*, 75. *t̃ək*: 70. *d'̃əng*.

$t' \sim d$ :

B. 98. *t'̃əg*: 99. *d̃̃əg*; 312. *t'̃iog*: 313. *d̃̃iog*; 351. *t'̃iók*: 350. *d̃̃iók*; 426. *t'̃ióg*: 425. *d̃̃ióg*; 582. *t'̃iog*: 579. *d̃̃iog*; F. 148. *t'̃iər* and *d̃̃iər*; 188. *t'̃ian*: 189. *d̃̃ian*.

$t' \sim d'$ :

B. 34. *t'ung*: 38. *d'ung*; 44. *t'ǎng*: 46. *d'ǎng*; 51. *t'̃ieng* and *d'̃ieng*; 119. *t'ák*: 120. *d'ák*; 192. *t'iang*: 191. *d'iang*; 217. *t'ung*: 216. *d'óng*; 226. *t'óg*: 225. *d'óg*; 237. *t'og*: 235. *d'ög*; 314. *t'̃ióg*: 315. *d'̃ióg*; 330. *t'̃iəng*: 331. *d'̃iəng*; 346. *t'̃ieng*: 347. *d'̃ieng*; 481. *t'óg*: 480. *d'óg*; 599. *t'̃iog*: 595. *d'̃iok*; 607. *t'̃iog*: 606. *d'̃iog*; F. 140. *t'wat*: 139. *d'wən*; 185. *t'án*: 186. *d'án*; 206. *t'wər*: 205. *d'wən*; 208. *t'wən* and *d'wən*; 241. *t'̃iər*: 238. *d'̃iər*; 247. *t'̃iat* and *d'̃iat*; 283. *t'án*: 284. *d'án*; 314. *t'ien*: 313. *d'ien*; 317. *t'̃iat* and *d'̃iat*; 331. *t'wər*: 329. *d'wən*.

$t' \sim t̃$ :

B. 14. *t'̃ək*: 13. *t̃̃ək*; K. 50. *t'̃iam*: 49. *t̃̃iam*.

$t' \sim t̃'$ :

B. 306. *t'̃iang*: 307. *t̃̃iang*; 628. *t'̃iəg*: 629. *t̃̃iəg*; F. 97. *t'̃iwət*: 96. *t̃̃iwət*.

$t' \sim d̃$ :

B. 599. *t'̃iog*: 598. *d̃̃ióg*; F. 283. *t'án*: 285. *d̃̃ian*.

$t' \sim d̃'$ :

F. 312. *t'wən*: 311. *d̃̃iən*.

$d \sim d'$ :

B. 280. *d̃̃iog*: 277. *d'óg*; 445. *d̃̃iək*: 447. *d'ieg*; 592. *d̃̃iog*: 593. *d'̃iog*; 605. *d̃̃iok*: 606. *d'̃iog*; 689. *d̃̃iog*: 688. *d'̃iog*; F. 189. *d̃̃ian*: 186. *d'án*; 194. *d̃̃iən*: 192. *d'̃iən*; 353. *d̃̃iet* and *d'̃iet*.

$d \sim t̃$ :

B. 118. *d̃̃iung*: 116. *t̃̃iung*; 250. *d̃̃iog*: 253. *t̃̃iog*.

$d \sim t̃'$ :

B. 242. *d̃̃iang*: 243. *t̃̃iang*; F. 189. *d̃̃ian*: 187. *t̃̃ian*.

$d \sim d̃$ :

B. 66. *d̃̃iang*: 64. *d̃̃iang*; 85. *d̃̃iəng*: 88. *d̃̃iəng*; 269. *d̃̃ióng*: 275. *d̃̃iók*: 594. *d̃̃iók*: 596. *d̃̃iuk*, 598. *d̃̃ióg*.

$d \sim d̃'$ :

B. 66. *d̃̃iang*: 70. *d̃̃iəng*; 663. *d̃̃iək*: 672. *d̃̃iak*.

$d' \sim t̃$ :

B. 609. *d'̃ióng*: 608. *t̃̃ióng*; 678. *d'̃iog*: 677. *t̃̃iog*; F. 19. *d'wán* and *t̃̃iwan*; 183. *d'̃iwr*: 181. *t̃̃iwr*; K. 21. *d'̃iap*: 20. *t̃̃iap*.

$d' \sim t̃'$ :

B. 29. *d'ák*: 30. *t̃̃iak*; 635. *d'̃iog*: 634. *t̃̃iók*.



*d' ~ d:*

B. 21. *d'ɿək*; 22. *d̥ɿək*; 298. *d'ɿəŋg*; 300. *d̥ɿək*; 465. *d'əg*; 466. *d̥ɿəg*; 470. *d'əŋg*; 471. *d̥ɿəŋg*; 532. *d'ɿəg*; 528. *d̥ɿəŋg*; 683. *d'ɿók*; 682. *d̥ɿók*; F. 284. *d'án*; 285. *d̥ian*.

*d' ~ d':*

B. 79. *d'əg*; 70. *d̥'ɿəŋg*.

*ī ~ i':*

B. 116. *īiung*; 117. *i'īiung*.

*ī ~ d:*

B. 143. *īiung*; 144. *d̥iung*; 274. *īók*; 275. *d̥ók*; 577. *īók*; 576. *d̥ók*; F. 19. *īiwan*; 20. *d̥iwan*; K. 51. *īəp*; 52. *d̥əp*.

*ts ~ ts':*

B. 219, 220. *tsáng*; 221. *ts'áng*; 295. *tsiěng*; 296. *ts'ěng*; 366. *tsog*; 367. *ts'óg*; F. 32. *tsiet*; 33. *ts'iet*; 214. *tswən* and *ts'wət*; 246. *tsiəwət*; 245. *ts'īwən*.

*ts ~ dz:*

B. 178. *tsiəg*; 181. *dz̥iəg*; 378. *tsáng*; 379. *dz̥iəng*; F. 89. *tsiěŋ*; 91. *dz̥iěŋ*; 122. *tsiəwən*; 123. *dz̥iəwən*; 214. *tsiəwən*; 215. *dz̥iəwəd*.

*ts ~ dz':*

B. 132. *tsiěng*; 133. *dz'ěng*; 176. *tsəg*; 177. *dz'əg*; 205. *tsəng*; 206. *dz'əng*; 219. *tsáng*; 222. *dz'áng*; 256. *tsiěng*; 258. *dz'ěng*; 295. *tsiěng*; 297. *dz'ěng*; 343. *tsiók*; 344. *dz'ók*; 353. *tsiəg*; 354. *dz'əg*; 378. *tsáng*; 380. *dz'ág*; 516. *tsiung*; 517. *dz'ūng*; F. 34. *tsiər*; 35. *dz'ər*; 27. *tsian*; 30. *dz'iat*; 64. *tsiəwəd* and *dz'īwət*; 72. *tsǎn*; 73. *dz'án*; 108. *tswən*; 111. *dz'wət*; 352. *tsiěŋ* and *dz'ěŋ*.

*ts ~ t̥s:*

B. 93. *tsiəng*; 94. *t̥siəng*; 176. *tsəg*; 179. *t̥siəg*; K. 7. *tsəm*; 8. *t̥siəm*.

*ts ~ t̥s':*

B. 172. *tsuk*; 173. *t̥s'úk*; 284. *tsóg*; 283. *t̥s'óg*.

*ts ~ s:*

B. 238. *tsog*; 241. *s̥ióg*; 667. *tsóg*; 668. *sóg*; F. 279. *tsuád*; 282. *s̥iəwəd*; K. 14. *tsam*; 15. *sam*.

*ts ~ s̥:*

B. 238. *tsog*; 240. *s̥ióg*; 521. *tsiók*; 527. *s̥iók*; K. 66. *tsiəm*; 67. *s̥iəm*.

*ts ~ s̥:*

B. 259. *tsiok*; 262. *s̥iok*; 285. *tsiog*; 291. *s̥iog*; 364. *tsiók*; 368. *s̥iók*.

*ts ~ z:*

B. 372. *tsáng*; 371. *ziəng*; K. 66. *tsiəm*; 68. *ziəm*.

*ts' ~ dz:*

B. 495. *ts'íók*; 497. *dz̥iók*.

*ts' ~ dz':*

B. 221. *ts'áng*; 222. *dz'áng*; 296. *ts'ěng*; 297. *dz'ěng*; 319. *ts'iog*; 320. *dz'iog*; F. 65.

*ts'wər* and *dz'wər*; 131. *ts'wər*: 130. *dz'wər*; 166. *ts'wət* and *dz'iwəd*; 210. *ts'wán*: 211. *dz'wan*; 325. *ts'iar*: 324. *dz'iar*.

*ts* ~ *tʃ*:

B. 168. *ts'ǐək*: 167. *tʃək*.

*ts'* ~ *tʃ'*:

F 60. *ts'ǐən*: 61, 62. *tʃ'ǐən*; 223. *ts'ǐwan*: 226. *tʃ'ǐwar*.

*ts'* ~ *dʒ'*:

B 319. *ts'ǐog*: 321. *dʒ'ǐóg*.

*ts'* ~ *s*:

B 365. *ts'ǐuk*: 370. *suk*; 383. *ts'ǐog*: 384. *sǐog*; F 26. *ts'ǎn*: 37. *san*; 332. *ts'ǐwən*: 333. *swən*; K. 75. *ts'əm*: 74. *səm*.

*ts'* ~ *ʃ*:

K 75. *ts'əm*: 76. *ʃǐəm*.

*ts'* ~ *ʃ*:

B 168. *ts'ǐək*: 185. *ʃǐak*.

*ts'* ~ *z*:

B 383. *ts'ǐog*: 385. *zǐóg*.

*dz* ~ *tʃ*:

B 181. *dzǐəg*: 180. *tʃǐəg*.

*dz* ~ *tʃ'*:

B 181. *dzǐəg*: 170. *tʃ'ǐək*.

*dz* ~ *s*:

F 271. *dzǐwan*: 280. *sǐwan*; 286. *dzǐər*: 287. *sǐər*.

*dz* ~ *ʃ*:

B 493. *dzǐuk*: 500. *ʃǐuk*; F 125. *dzǐwəd*: 127. *ʃǐwəd*.

*dz* ~ *ʃ*:

B 671. *dzǐóg*: 672. *ʃǐóg*; K 46. *dzǐəp*: 45. *ʃǐəp*.

*dz* ~ *z*:

B 450. *dzǐak*: 454. *zǐag*.

*dz'* ~ *tʃ*:

B 177. *dz'əg*: 179. *tʃǐəg*; K 82. *dz'ǐəp*: 84. *tʃəp*.

*dz* ~ *tʃ'*:

B 162. *dz'ǐang*: 163, 164. *tʃ'ǐang*; 458. *dz'ǐak*: 459. *tʃ'ǐək*.

*dz* ~ *dʒ'*:

B 320. *dz'ǐog*: 321. *dʒ'ǐóg*.

*dz'* ~ *s*:

B 621. *dz'ǐog*: 622. *sǐog*; 673. *dz'ǎk*: 674. *sǐak*.

*dz'* ~ *ʃ*:

B 162. *dz'ǐang*: 184. *ʃǐang*; K 55. *dz'ǐap*: 56. *ʃǐap*.

*tʂ ~ tʂ':*

B 167. *tʂɛk*: 166. *tʂ'ɛk*.

*tʂ ~ s:*

B 666. *tʂɔ̃g*: 668. *sɔ̃g*.

*tʂ' ~ s:*

B. 316. *tʂ'ɿang*: 322. *sɿang*.

*tʂ' ~ ʂ:*

B 391. *tʂ'ɿang*: 393. *ʂɿang*.

*tʂ' ~ ʂ:*

B 164. *tʂ'ɿang*: 184. *ʂɿang*.

*dʒ' ~ s:*

B 80. *dʒ'ɿɔ̃ng*: 84. *sɿɔ̃ng*; 467. *dʒ'ɿəg*: 469. *sɿəg*.

*s ~ ʂ:*

B 241. *sɿɔ̃g*: 240. *ʂɿɔ̃g*; 504. *sɿɔ̃g*: 503. *ʂɔ̃g*; K 74. *səm*: 76. *ʂɿəm*.

*s ~ ʂ:*

B 286. *sɿang*: 287. *ʂɿang*; 293. *sɿog*: 289. *ʂɿok*; 552. *sɿog*: 553. *ʂɿog*; F 48. *sɿər*: 49. *ʂɿər*.

*s ~ z:*

B 384. *sɿog*: 385. *zɿog*; F 144, 145. *sɿat*: 146. *zɿad*.

*ʂ ~ ʂ:*

B 500. *ʂɿuk*: 499. *ʂɿuk*.

*ʂ ~ z:*

K 67. *ʂɿəm*: 68. *zɿəm*.

*p ~ p':*

D 91. *pák*: 92. *p'ák*; 104. *pək*: 105. *p'iek*; 138, 139. *pɿog*: 141. *p'ɿog*; 186. *pung*: 187. *p'ɿung*; H 12. *pɿwăt*: 11. *p'wăt*, 14. *p'ɿwăt*; 21. *pɿər*: 22. *p'ɿər*; 31. *pɿwăn*: 32, 33. *p'wăn*; 152. *pian*: 153. *p'ɿan*.

*p ~ b':*

D 30. *pɿwáng*: 31—35. *b'wáng*; 38. *pɿěng*: 39. *b'ěng*; 46. *pɿǎng*: 47. *b'ǎng*; 59. *pák*: 57, 58. *b'ák*; 84. *pɿěng* and *b'ěng*; 117. *póg*, 116. *póg*: 118, 119. *b'óg*; 122. *pɿwəg*: 123, 124. *b'wəg*; 130. *pɿěg*: 129. *b'ěg*; 138, 139. *pɿog*: 142. *b'ɿog*; H 20. *pɿər* and *b'ɿər*, *b'ɿət*; 38. *pɿwən* and *b'ɿwən*; 39. *pɿat* and *b'ɿat*; 56. *pɿwən*: 54. *b'ɿwən*; 81. *pɿwər*: 82. *b'ɿwər*; 84. *pɿwət*: 85. *b'ɿwət*; 115. *pɿět*: 113. *b'ɿěn*; 120. *pɿwət*, 126. *pɿwəd*: 128. *b'ɿwər*; 150. *pɿwən*: 151. *b'ɿwər*.

*p' ~ b':*

D 97. *p'ɿung*: 98. *b'ɿung*; 105. *p'iek*: 106. *b'iek*; 114. *p'ɿwang*: 115. *b'ɿwak*; 137. *p'ɿug*: 135. *b'ɿük*; 141. *p'ɿog*: 142. *b'ɿog*; 150. *p'óg*: 151. *b'ɿog*; 155. *p'ɿók*: 154. *b'ɿók*; 181. *p'ɿog*: 182. *b'ɿóg*; H 29. *p'ian*, 30. *p'ɿan*: 27. *b'ɿan*; 77. *p'ɿwən*: 78. *b'ɿwən*.

It is easily seen that whereas some of the alternations in these four series are quite rare, others are extremely common and regular and can be said to be some of the principal instruments of the Chinese language in word derivation. As particularly important and normal I wish to point out two:

The alternation of unaspirated surd and aspirated sonant:  $t \sim d'$ ,  $k \sim g'$ ,  $ts \sim dz'$ ,  $p \sim b'$ ;

The alternation of aspirated surd and aspirated sonant:  $t' \sim d'$ ,  $k' \sim g'$ ,  $ts' \sim dz'$ ,  $p' \sim b'$ .

We have to take up next a very intricate question: whether these four series of initials can be proved to alternate with certain other initials not yet discussed, and whether some of these latter initials have alternations between themselves. There are here six questions which have to be answered. Is there an etymological connection between:

1. The *k* series and the laryngeal explosive  $\cdot$ ;
2. The *k* series and  $\chi$ ;
3. The *k* series and *ng*;
4. The *t* series and the *ts* series;
5. The *p* series and *m*;
6. *n*, *n'* and *l*.

The first four of these questions I think must decidedly be answered in the affirmative; of the last two the good examples are so few as to leave room for doubt:

*k* etc.  $\sim \cdot$ :

A 1. *k'ǎng*: 19. *·iǎng*; 60. *g'wǎng*: 69. *·wǎng*; 186. *k'iang*: 201. *·i'iang*; 245. *kung*: 249. *·ung*; 259. *k'ǔng*, 260. *g'ǔng*: 265. *·ung*; 266. *g'iwang*: 273. *·wǎng*; 328. *g'íôg*: 329. *·iôg*; 353. *k'íog*: 354. *·iôg*; E 1. *kwán* and *·wát*; 10. *k'íwan*: 30. *·wán*; 37. *g'wen*: 49. *·wən*; 114. *k'wán*: 121. *·wán*; 117. *g'íwǎt*: 123. *·íwǎt*; 189. *g'íwǎn*: 192. *·íwǎn*; I 1. *g'iam*: 11. *·iam*; 2. *g'íem*: 12. *·em*.

*k* etc.  $\sim \chi$ :

A 64. *g'ung*: 66. *χung*; 76. *g'wǎng*: 87. *χwǎng*; 80. *k'íung*: 88. *χíung*; 140. *k'iwang*, 141. *g'íwang*: 152. *χwǎng*; 215. *k'ǔng*: 222. *χíung*; 307. *k'íôk*: 308. *χíôk*; 362. *k'íôg*: 364. *χíôg*; E 32. *kán*: 40. *χán*; 73. *k'íet*: 78. *χíet*; 105. *g'ian*: 109. *χiǎn*; 129. *kian*, 130. *g'ian*: 135. *χian*; 167. *g'iwən*: 168. *χiwən*; 174. *k'íad*: 175. *χiǎt*; I 38. *k'íǎp*: 39. *χiǎp*; 77. *g'ǎp*: 80. *χiǎp*.

*k* etc.  $\sim ng$ :

A 250. *káng*: 257. *ngǎng*; E 2. *g'wán*: 29. *ngwán*; 79. *kán*, 80. *kan*: 86. *ngan*; 128. *k'án*, 129. *kian*: 137. *ngen*; 138. *g'iwən*: 142. *ngiǎn*; 189. *g'íwǎn*: 190. *ngíwǎn*; 234. *g'íet*: 235. *ngíet*; 307. *kwǎt*: 319. *ngwǎt*; 318. *kər* and *ngər*; I 40. *g'iam*: 42. *ngiǎm*; 63. *k'íəm*: 66. *ngiəm*.

*t* etc. ~ *ts* etc.:

B 1. *ḍiāng*: 5. *ṣiāng*; 17. *d'ṣiāg*: 19. *ṣiāg*; 70. *ḍ'iāng*: 83. *ṣiāng*; 69. *tāng*: 83. *ṣiāng*; 101. *t'ṣiāng*: 110. *ṣiāng*; 106. *t'ṣiāg*: 111. *ṣiāg*; 151. *ṭiāk*: 165. *ṣiāk*; 153. *tək*: 167. *ṣiāk*; 157. *ṭiēg*: 174. *ṣiēg*; 203, 204. *tāng*: 205. *ṣāng*, 206. *dz'āng*; 230. *tūk*: 231. *dz'ūk*; 237. *t'og*: 238. *ṣog*; 264. *t'āng*: 286. *ṣiāng*; 271. *t'āk*: 288. *ṣiāk*; 278. *ṭiōg*: 293. *ṣiōg*; 306. *t'iang*, 307. *t'iang*: 316. *ṣi'iang*; 312. *t'ioḡ*: 319. *ṣi'ioḡ*, 320. *dz'ioḡ*; 314. *t'ioḡ*, 315. *d'ioḡ*: 321. *dz'ioḡ*; 330. *t'iang*: 334. *ṣiēng*; 333. *t'iak*: 335. *ṣiāk*; 342. *d'ioḡ*: 343. *ṣiōg*, 344. *dz'ioḡ*; 358. *tieng*, 359. *d'ienḡ*: 360. *ṣi'ienḡ*; 397. *ṭiāg*: 400. *ṣiāk*, 401. *ṣiāg*; 398. *d'ioḡ*: 402. *ziōg*; 428. *ḍiāk*: 428. *dz'iaḡ*; 429. *t'iaḡ*: 431. *dz'iaḡ*; 446. *d'iek*: 449. *siek*; 465. *d'ag*, 466. *ḍiāg*: 467. *dz'iaḡ*, 469. *ṣiāg*; 485. *d'ioḡ*: 495. *ṣi'ioḡ*; 532. *d'iaḡ*: 540. *ziāg*; 543. *ṭiung*: 547. *dz'ung*; 557. *t'ōg*: 558. *ṣōg*; 560. *tiōg*, 559. *d'ioḡ*: 561. *dz'ioḡ*; 562. *d'ioḡ*: 565. *siōg*; 600. *ṭiōg*: 601. *siōg*; 630. *ḍiēg*: 633. *ṣiēg*; 670. *tiōg*: 671. *dz'ioḡ*, 672. *ṣiōg*; F 2. *ḍiwan*: 9. *dz'iwān*; 46. *ṭiān* and *ṣiān*; 50. *t'ian*: 52. *ṣiān*; 55. *ṭiēn*: 56. *ṣiēn*; 63. *ṣwān*: 67. *ṣiwan*; 83. *t'ien*: 87. *ṣiēn*; 112. *ṭiān*: 114. *dz'ian*; 118. *d'iwān*: 122. *ṣiwan*, 123. *dz'iwān*; 119. *d'iwāt*: 127, 128. *ṣiwan*; 129. *t'wār*: 131. *ṣiwan*, 130. *dz'wār*; 133. *d'wāt*: 137. *ṣiwan*; 192. *d'ien*: 196. *ṣiēn*; 290. *ṭiwan*: 291. *ṣiwan*; 327. *d'iwāt*: 328. *dz'iwāt*; 329. *d'wān*: 333. *swān*; 344. *d'wār*: 345. *dz'wān*; K 3. *ḍiam*: 5, 6. *ṣiam*; 9. *ṭiam*: 7. *ṣam*, 8. *ṣiam*; 16, 17. *d'iap*: 19. *dz'iap*; 26. *d'am*: 27. *dz'iem*; 28. *d'am*: 31. *ṣiam*; 40. *d'am*: 44. *ṣiam*; 41. *d'am* and *dz'iem*; 62. *ṭiam*: 64. *ṣiam*.

*p* etc. ~ *m*:

D 3. *b'ung*: 12. *mung*; 100. *pāk*: 103. *māk*; H 64. *b'iwān*: 66, 67. *mwān*; 71. *b'iwān*: 72. *mwān*; 75. *p'iwān*: 76. *m'iwān*; 84. *p'iwāt*: 90. *m'iwāt*.

*n*, *ñ* ~ *l*:

C 49, 50. *n'ioḡ*, 48. *n'ioḡ*: 51. *liog*; G 7. *n'iat*: 14. *liat*; 23. *n'ian*: 17. *liwān*.

### *The medial (intercalary, subordinate) vowels.*

I shall design here the word type without *i*, *i*, *w* (type *kān* etc.) by 0. The theoretically possible alternations are the following:

1. 0 ~ *i*; 2. 0 ~ *i*; 3. 0 ~ *w*; 4. 0 ~ *iw*; 5. 0 ~ *iw*; 6. *i* ~ *i*; 7. *i* ~ *w*; 8. *i* ~ *w*; 9. *i* ~ *iw*.

Most of them are well represented:

0 ~ *i*:

A 4. *g'wāng*: 6. *giwāng*, 7. *giwāng*; 8. *kēng*: 1. *k'āng*; 32. *kōg*: 31. *k'ioḡ*; 66. *ḡung*: 67. *ḡiung*; 76. *g'wāng*: 77. *k'iwāng*; 83. *g'eg*: 84. *g'iaḡ*; 89. *ḡāk*: 90. *ḡiāk*; 98. *kog*: 100. *g'ioḡ*; 103. *ngāng*: 105. *ngiāng*; 134. *k'āng*: 135. *k'iaḡ*; 143, 144. *kwēg*: 145. *k'iwēg*; 149. *kog*: 150. *kioḡ*; 153. *kāng*: 155. *k'iaḡ*; 156. *kwāng*: 158. *giwēng*; 172. *kāng*: 175. *g'iaḡ*; 176. *kwāk*: 177. *giwāk*; 184. *kāng*, 185. *kāng*: 186, 187. *k'iang*; 190. *k'ung*: 191. *k'ung*; 196. *kog*: 197. *kioḡ*; 209. *kwāng*: 212. *giwēng*; 213. *k'ung*: 216. *k'ung*; 246. *k'ōg*: 247. *g'ioḡ*; 250. *kāng*: 252. *k'iang*; 257. *ngāng*: 258. *ngiāng*; 276. *g'wāng*: 277. *giwāng*; 278. *g'wāk*: 279. *k'iwāk*; 288, 289. *ək*: 292. *ḡēk*; 302. *kog*: 305. *k'ioḡ*; 318. *kēk*, 320. *kēg*:

316. *k'ǎk*; 332. *g'æg*; 333. *gǐæg*; 336. *g'æg*; 337. *g'ǐæg*; 365. *g'og*; 366. *g'ǐog*; B 29. *d'ák*: 30. *ǐ'jak*; 34. *t'ung*; 39. *ǐ'jung*; 46. *d'ǎng*; 48. *d'ǐang*; 69. *təng*; 70. *d'ǐeng*; 69. *təng*: 75. *tǐək*; 71. *tung*; 72. *tǐung*; 92. *tsǎng*; 94. *tsǐang*; 150. *t'ák*; 151. *ǐ'jak*; 166. *ts'ək*: 168. *ts'ǐək*; 176. *tsəg*; 177. *dz'æg*; 178. *tsǐæg*; 181. *dzǐæg*; 179, 180. *tsǐæg*; 210. *d'ǎng*: 213. *ǐ'ag*; 264. *t'ǎng*; 265. *dǐang*; 276, 277. *d'óg*; 280. *dǐog*; 284. *tsóg*; 285. *tsǐog*; 290. *sog*; 292. *sǐog*; 311. *d'og*; 310. *tog*; 313. *dǐog*; 312. *t'ǐog*; 318. *ts'og*; 319. *ts'ǐog*; 322. *sǎng*; 323. *sǐak*; 355. *səng*; 356, 357. *sǐəng*; 370. *suk*; 365. *ts'ǐuk*; 372. *tsǎng*; 371. *zǐang*; 378. *tsǎng*; 379. *dzǐang*; 403. *tǎng*; 405. *d'ǎng*; 407, 408. *ǐ'ang*; 417. *d'óg* and *d'ǐog*; 424. *t'óg*; 426. *t'ǐog*; 459. *ts'ək*; 458. *dz'jak*; 463. *ts'æg*; 462. *tsǐag*; 465. *d'æg*; 466. *dǐəg*; 470. *d'əng*; 471. *dǐəng*; 480. *d'óg*; 485, 486. *d'ǐog*; 551. *şög*; 553. *şǐog*; 588. *tog*; 589. *ǐ'óg*: 601. *sóg*; 600. *ǐ'óg*; 614. *tóg*; 612, 613. *ǐ'óg*; 673. *dz'ák*; 674. *sǐak*; 675. *tsək*; 676. *tsǐək*; 691. *d'og*; 693. *d'ǐog*; C 1. *lək*; 2. *lǐæg*; 5. *nák*; 6. *nǐak*; 28. *glǎg*; 25. *gliang*; 34. *nǒg*; 35. *nǐog*; 52. *ləng*; 53. *lǐəng*; 70. *log*; 71. *lǐog*; 72. *nəg*; 73. *nǐəg*; D 31—35. *b'wǎng*; 36. *b'ǐwǎng*; 45. *p'ǎng*; 47. *b'ǐǎng*; 53, 54. *b'óg*; 56. *b'ǐog*; 67. *mǎng*; 70. *mǎng*: 68. *mǐwǎng*; 86. *pǔng*; 87. *pǐung*; 126. *pǎng*; 127, 128. *b'ǐǎng*; 129. *b'æg*; 130. *pǐəg*; 148. *pǒg*; 149. *pǐog*; 150. *p'óg*; 151. *b'ǐog*; 152. *b'óg*; 153. *b'ǐog*; 164. *mǒg*; 165. *mǐog*; 186. *pung*; 187. *p'ǐung*; E 1. *kwǎn*, 2. *g'wǎn*, 3—7. *g'wan*: 8. *kǐwan*, 9. *g'ǐwan*, *k'ǐwan*, 12. *gǐwan*; 19. *kwən*; 22. *gǐwən*; 25. *g'wər*; 28. *gǐwər*; 32. *kǎn* and *g'ǐan*; 37. *g'wən*: 39. *gǐwər*; 46, 47. *χwǎr*: 44, 47. *χǐwar*; 53. *kwǎn*; 54. *kǐwǎn*; 74. *ked*; 75. *kǐed*; 95. *ǎn*: 96. *ǐ'an*; 106. *kat*; 108. *kǐǎt*, *g'ǐat*; 120. *kwət*, 119. *k'wət*; 117. *g'ǐwət*; 122. *ǐ'wat*: 123. *ǐ'wat*; 132. *kwǎn*; 133. *kǐwan*; 140. *g'wad*; 139. *gǐwǎt*; 154. *ǐ'wǎn*, 156. *ǐ'wan*: 158. *ǐ'wǎn*, 161. *ǐ'war*; 185. *g'ǎn*; 186. *g'ǐǎn*; 226. *k'ǎn*, 228. *g'ǎn*; 230. *g'ǐǎn*; 231. *k'at*; 232, 233. *g'ǐat*; 300. *k'ǎn*; 302. *g'ǐan*; 312—314. *kwǎd*, 307. *kwǎt*; 315. *kǐwǎd*; 319. *ngwǎt* and *ngǐwǎt*; F 19. *d'wǎn* and *ǐ'wan*; 63. *tswən*; 64. *tsǐwǎd*; 74. *d'ǎn*: 75. *tǐan*; 166. *ts'wət* and *dz'ǐwǎd*; 180. *twər*; 181, 182. *ǐ'wər*, 183, 184. *d'ǐwər*; 185. *t'ǎn*, 186. *d'ǎn*; 188. *t'ǐan*, 187. *ǐ'ǐan*, 189—191. *dǐan*; 214. *tswən* and *tsǐwən*; 214. *tswən*, *ts'wət*; 215. *dzǐwǎd*; 216. *twən*; 217. *ǐ'wən*; 233. *ts'wər*; 234, 235. *sǐwən*, 236. *sǐwǎd*; 259. *d'ǎn*; 262, 263. *d'ǐan*; 279. *tswǎd*; 282. *sǐwad*; 283. *t'ǎn*, 284. *d'ǎn*; 285. *dǐan*; 299. *tǎn*; 301. *tǐan*; 308. *swən*; 309. *sǐwər*; 316. *d'át*; 317. *d'ǐat*; 318. *tǎn*; 319. *ǐ'ian*; 333. *swən*; 332. *ts'ǐwən*; 343. *d'wər*; 342. *d'ǐwǎd*; G 1. *nan*; 2, 3. *nǐan*; 25. *lǎt*; 27, 28. *ǐ'at*; H 10. *pwát*, 11. *p'wát*; 12. *pǐwǎt*, 14. *p'ǐwǎd*; 24. *p'wər*; 23. *p'ǐwər*; 26, 27. *b'ǎn*; 27, 28. *b'ǐan*; 66, 67. *mwən*; 69. *mǐwən*; 79. *b'wət*; 81. *pǐwər*; 83. *pwət*; 84. *pǐwət*, 87. *pǐwər*; 125. *pǐəd*; 126. *pǐwǎd*; 155. *mwǎn* and *mǐwǎn*; I 8. *ǎm*; 9, 10. *ǐ'am*; 12. *ǐ'em*; 13, 14. *ǐ'em*; 15—18. *ǎm*; 19, 20. *ǐ'am*; 31. *kap*, 34. *g'ap*; 39. *χǐǎp*; 43. *χǎp*: 44, 45. *χǐǎp*; 50. *ǎp*; 51. *ǐ'ap*; 62. *k'əm*; 63. *k'ǐəm*; 64. *ngam*; 65. *ngǐam*; 77. *g'ǎp*: 80. *χǐǎp*; 83. *k'am*; 84. *k'ǐam*; K 1. *tsám*; 5, 6. *tsǐam*; 7. *tsəm*; 8. *tsǐəm*; 28. *d'əm*: 29. *d'ǐəm*; 36. *tsám*; 38. *dz'ǐap*; 40. *d'ám*; 41. *dǐam*; 42. *d'əm*; 43. *dǐəm*; 57. *d'ám*: 58. *ǐ'am*; 74. *səm*; 76. *sǐəm*; 81. *dz'ǎp*; 82, 83. *dz'ǐǎp*; 87. *nǎp*; 90. *nǐǎp*.

0 ~ i:

A 133. *g'eg*; 132. *g'ǐeng*; 196. *kog*; 198. *kiog*; 303. *g'óg*; 306. *kiog*; 346. *g'og*; 347. *kiog*; B 103. *tók*; 104. *d'íók*; 159. *tog*; 160. *tíog*; 153. *tək*; 152. *tiək*; 235. *d'ók*; 236. *d'íók*; 480. *d'óg*; 484. *d'íog*; 503. *şög*; 504. *síog*; C 12. *log*; 13. *liog*; 34. *nǒg*; 36. *níog*;

D 104. *pək*: 105. *p'iek*; E 84. *kwád*: 83. *kiwat*; 89. *k'wad*: 88. *kiwat*; 106. *kat*: 107. *k'iat*; 128. *k'án*: 129. *kian*; 178. *án*, 179. *an*: 180, 181. *ian*; 203, 204. *k'ər*: 205. *k'iar*; 224. *ken*: 225. *kien*; 305. *kát*; 311. *g'ád*: 309. *k'iat*, 316, 317. *k'iad*; 330. *at*: 331. *ian*; F 307. *ser* and *siər*; 326. *dz'er*: 324. *dz'iar*; 350. *tsed*: 351. *tsiər*; G 11. *glán*: 12, 13. *glian*; I 21. *g'am*: 27. *kiap*; 31. *kap*, 32—34. *g'ap*: 35. *kiap*, 37. *g'iap*; 60. *g'ap*: 59. *k'iap*; 83. *k'am* and *k'iam*; K 32, 33. *d'am*: 34. *d'iam*; 60. *d'áp*: 61. *d'iap*.

0 ~ w:

20. A *g'ǎng*: 21. *g'wáng*; 50. *g'ǎng*: 49. *g'iwang*; 51. *g'ǎng*: 52. *g'wǎng*; 73. *k'ǎng*: 77. *k'iwang*; 147. *k'ǐəg*: 148. *k'iwəg*; 202. *ǐəng*: 203. *ǐwəng*; 206. *k'ǎng*: 207. *k'wáng*; 331. *kək*: 330. *k'wák*; 335. *g'ǐəg*: 334. *g'ǐwəg*; D 24, 25. *mək*: 27. *mwəg*; 37. *b'ǎng*: 35. *b'wáng*; 40. *b'əng*: 42. *b'wəg*; 43. *mǐəng*: 44. *mǐwang*; 121. *pək*: 122. *pwəg*; E 45. *ǐər*, 42. *ǐən*: 46, 48. *ǐwər*; 52. *k'ian*: 55. *k'ǐwǎn*; 79. *kán*, 80. *kan*: 81. *g'wǎn*; 99. *k'ən*: 100. *k'wən*; 111. *k'ən*: 112. *g'wət*; 128. *k'án*: 132. *kwán*; 142. *ngǐǎn*, 143. *ngǐan*: 139. *g'iwǎt*, 138. *g'iwən*; 153. *ǐǎn*: 158, 160. *ǐwǎn*; 185. *g'ǎn*: 187. *kwan*; 265. *ǐən*: 266. *ǐwən*; 268. *ǐad*: 270. *ǐwǎd*; 291, 292. *g'ian*: 293, 294. *g'iwǎn*; 305. *kát*, 311. *g'ád*: 307. *kwǎt*, 312, 313. *kwád*; F 41. *tsian*: 43. *tsiwan*; 112. *tian*: 113. *ǎiwan*; 160. *tán*: 161. *d'wán*; 259. *d'án*: 265, 266. *d'wán*; 261. *tian*: 267. *tǐwan*; 302. *ǎiwan*: 303. *tǐwan*; G 1. *nan*: 4, 5. *nwán*; 7. *ǐiat*: 8. *ǐiwat*; H 21. *pǐər*: 23. *p'ǐwər*; 26, 27. *b'ǎn*: 31. *pwán*, 32. *p'wán*; 68. *mǐen*: 69. *mǐwən*; I 38. *k'ǐǎp* and *k'ǐwǎb*; 77. *g'əp*: 78. *g'wəb*; 85. *təp*: 86. *twəb*; K 87. *nəp*: 89. *nwəb*.

0 ~ ǐw:

A 20. *g'ǎng*: 22. *g'iwang*; 109. *ngǐəg*: 110. *ngǐwəg*; 243. *g'ǎng*: 244. *k'ǐwang*; E 40. *ǐán*: 41. *ǐwǎn*; 128. *k'án*: 133. *kǐwan*; 300. *k'án*: 301. *k'ǐwǎn*; 305. *kát*, 311. *g'ád*: 308. *g'iwǎt*, 315. *kǐwǎd*; F 163. *tát*: 164. *tǐwat*; 259. *d'án*: 269. *d'ǐwan*.

0 ~ iw:

A 8. *kǐəng*: 9, 10. *kiweng*, 11, 12. *g'iweng*.

ǐ ~ i:

A 58. *g'ǐwəng*: 57. *g'iweng*; 129. *kǐəng*: 130. *kieng*; 192. *kǐəg*: 193. *g'ieg*; 197. *kǐog*: 198. *kǐog*; 350. *ǐóg*: 349. *ǐog*, 352. *ǐóg*; 354. *ǐog*: 356. *ǐóg*; 363. *gǐog*, 364. *ǐóg*: 362. *kǐóg*; B 54. *tǐəng*: 53. *d'ieing*; 248. *tǐog*, 253. *tǐog*: 245. *tiok*; 302—304. *dz'ǐəng*: 305. *dz'iek*; 340. *d'ǐəng*: 341. *tieng*; 485. *d'ǐóg*: 484. *d'ǐóg*; 559. *dǐog*: 560. *tióg*; 579. *dǐog*: 582. *t'ǐog*; 592. *dǐog*: 593. *d'ǐog*; 598. *ǎióg*: 599. *t'ǐog*; 605. *dǐok*, 607. *t'ǐog*: 606. *d'ǐog*; 689. *dǐog*: 688. *d'ǐog*; C 35. *ǐiog*: 36. *niog*; D 38. *pǐəng*: 39. *b'ieing*; 84. *pǐəng* and *b'ieing*; E 108. *kǐat*, *g'iat*: 107. *k'iat*; E 220. *ǐər*: 221. *ǐər*; F 114. *dz'ǐan*: 117. *ts'iar*; 148. *dǐər* and *t'ǐər*; 176. *t'ǐət*: 174. *d'ien*; 248. *ǎiəd*: 249. *d'iad*; 286. *dzǐər*: 287. *siər*; 315. *tǐət* and *tiet*; 314. *tiən* and *t'ien*; 353. *dǐət* and *d'iet*; G 31. *ǐəd*: 32. *liər*; H 21. *pǐər*: 22. *p'ǐər*; 30. *p'ǐan*: 29. *p'ian*; 153. *p'ǐan*: 152. *pian*; I 29. *g'iam*: 37. *g'iap*; 84. *k'ǐām*: 83. *k'iam*.

ǐ ~ w:

A 1. *kǐǎng*: 3. *kwǎng*; 73. *kǐǎng*: 76. *g'wǎng*; 315. *k'ǐak*: 317. *k'wák*; E 52. *k'ǐan*:

53. *kwân*; 142. *ngiăn*, 143. *ngian*: 140. *g'wad*; 153. *ĩăn*: 154. *·wân*, 156. *·wan*; 186. *g'ĩăn*: 187. *kwan*; F 105. *twât*: 106. *d'wât*: 104. *ĩ'iat*, 103. *d'iat*; 209. *tsian*: 210. *ts'wân*, 211, 212. *dz'wan*; 261. *tian*: 266. *d'wân*; 311. *điən*, *đ'ien*: 312. *t'wən*; G 2, 3. *niān*: 4, 5. *nuân*; H 21. *p̄ər*: 24. *p'wər*; 27. *b'ian*, 30. *p'ian*: 31. *puân*, 32. *p'wân*; 45. *b'ian*: 48. *puân*; 68. *mien*: 66, 67. *mwən*; 144—146. *b'iad*: 143. *b'wad*.

*i ~ w*:

A 93. *g'ieŋ*: 94. *g'wěŋ*; E 129. *kian*: 132. *kwân*; 309. *k'iat*, 316, 317. *k'iad*: 307. *kwât*, 312—314. *kwád*; G 32. *liər*: 33. *lwər*; H 22. *p'ier*: 24. *p'wər*; 29. *p'ian*: 32. *p'wân*; 89. *miat*: 88. *mwât*.

*i ~ i̇w*:

E 129. *kian*: 133. *k̄iwan*; 210. *kiər*: 211. *g'iwər*; F 30. *dz'iat*: 31. *dz'iwat*; 281. *siən*: 278. *dziwən*; H 22. *p'ier*: 23. *p'iwər*.

The examples given are sufficient to show that the alternations  $0 \sim i$ ,  $0 \sim w$ ,  $i \sim i̇$ , and quite particularly the first one (type *kân ~ k̄ian*), are among the fundamental means of the Chinese language for creating derivatives from one and the same word stem.

### *The principal vowels.*

By alternations of all the vowels of the Archaic Chinese phonetic system the language has created an *Ablaut* system which is extremely rich and varied, and it is in this respect a true sister language of Tibetan, in which such an *Ablaut* plays a predominant part. I shall exemplify first the alternations of the different varieties of the same principal vowel (*â*: *a*: *ă*; *ō*: *ô*: *ō̇*: *ē*: *e*: *ũ*: *u*), and then the alternations of the different principal vowels.

*â ~ a*:

For the very numerous cases of type *â*: *ia* (*kân*: *k̄ian* etc.) see alt.  $0 \sim i̇$  above. Furthermore:

E 2. *g'wân*: 3—7. *g'wan*; 79. *kân*: 80. *kan*; 121. *wân*: 122. *·wat*; 124. *kwân*: 125. *g'wan*; 154. *·wân*: 156. *·wan*; 178. *·ân*: 179. *·an*; 252. *·ân*: 254. *·at*; 333. *kwân*: 334. *g'wan*; F 210. *ts'wân*: 211, 212. *dz'wan*; G 4, 5. *nuân*: 1. *nan*; H 136. *puât*: 137. *b'wat*; I 71. *glâm*: 69. *klam*; K 1. *tsâm*: 2. *dz'am*.

*â ~ ă*:

A 76. *g'wâng*: 73. *k̄iăng*; 134. *k'âng*: 135. *k'ĩăng*; 184. *kâng*: 185. *kăng*; 207. *k'wâng*: 209. *kwăng*, 206. *k'ăng*; 250. *kâng*: 257. *ngăng*; 323. *·āk*, *·ág*: 324. *·ăg*; D 35. *b'wâng*: 37. *b'ăng*; 67. *mâng*: 70. *măng*; 91. *pák*: 92. *p'ăk*; 126. *pâng*: 127, 128. *b'ĩăng*; 168. *pák*: 169. *păk*; 226. *k'ân*, 227. *g'ân*: 228, 229. *g'ăn*, 230. *g'ĩăn*; 305. *kát*, 312—314. *kwád*: 307. *kwât*, 315. *k̄iwád*; F 73. *dz'ân*: 72. *tsăn*; H 10. *puât*: 12. *p̄iwât*; I 47. *k'âm*: 48. *g'ăm*.



*a* ~ *ǎ*:

A 6. *giwang*: 7. *giwǎng*; 22. *giwang*: 20. *g'ǎng*; 49. *g'iwang*: 50. *g'ǎng*; 77. *k'iwang*: 73. *k'ǎng*; 168. *k'iang*: 170. *k'ǎng*; 253. *g'iang*: 254. *g'ǎng*; 279. *k'iwak*: 278. *g'wǎk*; B 48. *d'iang*: 46. *d'ǎng*; E 13. *giwan* and *giwǎn*; 56. *g'iwān*: 55. *k'iwǎn*; 108. *g'iat* and *k'iat*; 143. *ngian*: 142. *ngiǎn*; 161. *īwar*: 160. *īwǎn*; 280. *īwan*: 281. *īwǎn*; F 37. *san*: 26. *ts'ǎn*; H 27. *b'ian* and *b'ǎn*.

*ō* ~ *o*:

A 124. *kōg*: 122, 123. *kog*; B 235. *d'ōg*: 237. *t'og*; 283. *ts'ōg*: 285. *tsiog*; 551. *šōg*: 553. *šiog*; C 34. *nōg*: 35. *nīog*; D 148. *pōg*: 149. *pīog*; 164. *mōg*: 165. *mīog*.

*ō* ~ *ô*:

A 124. *kōg*: 121. *g'ôk*; 340. *kōg*: 342. *kôg*; 340, 341. *g'ōg*: 343. *g'ôg*, 339. *g'ôk*.

*ō* ~ *ô*:

A 305. *k'ōg*: 306. *kiog*; 340. *g'ōg*: 345. *k'ôg*; B 235. *d'ôk*: 236. *d'îôk*; 283. *ts'ōg*: 284. *tsôg*; 503. *šōg*: 504. *siôg*; 666. *tsōg*: 667. *tsôg*, 668. *sôg*.

*o* ~ *ô*:

A 113. *ngiog*: 108. *ngôk*; 122, 123. *kog*: 121. *g'ôk*; 218. *g'og*: 221. *kôg*; D 52. *b'og*, 49. *b'ok*: 53, 54. *b'ôg*; 151. *b'iog*: 150. *p'ôg*; 153. *b'iog*: 152. *b'ôg*.

*o* ~ *ô*:

A 197. *k'iog*: 199. *k'îog*; 301. *k'og*: 300. *k'ôg*; 302. *kog*: 303. *g'ôg*; 347. *kiog*: 348. *kiôg*; 349. *īog*: 352. *īôg*; 354. *īog*: 356. *īôg*; 363. *giog*: 362. *kiôg*; B 248. *t'iog*, 253. *t'iog*: 255. *t'îog*; 273. *t'îok*: 274. *t'îôk*, 275. *d'îôk*; 280, 281. *d'iog*: 276, 277. *d'ôg*; 285. *tsiog*: 284. *tsôg*; 312. *t'iog*, 313. *d'iog*: 314. *t'îôg*, 315. *d'îôg*; 319. *ts'iog*, 320. *dz'iog*: 321. *dz'îog*; 366. *tsog*: 367. *ts'ôg*; 456. *s'iog*: 452. *s'îôk*; 559. *d'iog*: 560. *tiôg*; 588. *tog*: 589. *t'îog*; 691. *d'og*: 692. *d'ôg*; C 48. *n'iog*: 49, 50. *n'îog*; 70. *log*: 71. *l'îog*; D 181. *p'iog*: 182. *b'îog*.

*ô* ~ *ô*:

A 121. *g'ôk*: 125. *k'îog*; 344. *k'ôg*: 345. *k'ôg*; D 53, 54. *b'ôg*: 56. *b'îog*; 117. *pôg*: 118, 119. *b'ôg*.

*ē* ~ *e*:

For the numerous cases of this alternation see alt. *ō* ~ *î* and *ō* ~ *î* above.

*ũ* ~ *u*:

A 36. *k'ūk*: 37. *kuk*; 215. *k'ũng*: 214. *k'ung*; 268. *k'ũng*: 270. *k'īuk*; B 42. *d'ũg*: 41. *d'uk*; 123. *tūk*: 125. *t'īuk*; 115. *d'ũng*: 116. *t'īung*; 626. *t'ũng*: 625. *t'ung*; D 86. *pũng*: 87. *pīung*; 90. *b'ũng*: 94. *p'uk*; 101, 102. *b'ũg*: 98. *b'īung*; 135, 136. *b'īūk*: 137. *p'īug*.

*a* ~ *e*:

A 1. *k'ǎng*: 8. *kěng*; 6. *giwang*, 7. *giwǎng*: 11, 12. *g'iweng*; 52. *g'wǎng*: 53. *kiweng*; 91. *kāng*: 93. *g'ieug*; 115. *xiang*: 117. *xieng*; 134. *k'ǎng*, 135. *k'ǎng*: 136. *g'ěng*; 184. *kāng*, 185. *kǎng*: 188. *kieng*; 207. *k'wǎng*, 209. *kwǎng*: 212. *giwěng*; 240. *k'iang*: 241.

*k'iwěng*; 253. *g'iang*, 254. *g'ǎng*; 255. *kjěng*; B 5. *siang*: 6. *sǐg*; 48. *d'iang*: 53. *d'ieng*; 46. *d'ǎng*, 44. *t'ǎng*: 54. *tjěng*; 108. *siang*: 110. *sǐng*; 136. *d'áng*: 138. *d'ieng*; 151. *tjak*: 154. *t'iek*; 265. *djang*, 264. *t'áng*: 266. *tieng*; 338. *ts'áng*: 339. *ts'ieng*; 391. *ts'iang*: 392. *ts'jěng*; 405. *d'áng*, 407, 408. *tjang*: 410. *djěng*, 412. *t'ieng*; 444. *djak*: 445. *djěk*; 458. *dz'jak*: 459, 460. *ts'ek*; 462. *tsiag*: 403. *tsǐg*; 529. *d'ǎk*: 531. *těk*; 660. *djak*: 661. *djěk*; C 58. *liang*: 59. *ljěng*, 60. *lieng*; D 1. *b'ǎng*: 2. *pěng*; 6. *mǎng*: 9. *mieng*; 31. *b'wǎng*: 38. *pjěng*, 39. *b'ieng*; 183. *p'iwang*: 184. *p'jěng*; E 9. *g'iwān*, 12. *giwān*, 13. *giwǎn*: 15, 16. *g'iwēn*; 34. *g'ian*: 36. *g'iwēn*; 52. *k'ian*: 57. *kjēn*, 58. *g'ien*; 63. *kwāt*: 64. *kiet*; 86. *ngan*: 87. *ngjēn*; 117. *g'iwāt*: 118. *g'iwet*; 232, 233. *g'iat*: 234. *g'jēt*; 252. *án*: 253. *ien*; 254. *at*: 255. *jēt*; 268. *iad*: 269. *jēd*; F 30. *dz'iat*: 32. *tsiet*, 33. *ts'iet*; 54. *tán*: 55. *tjēn*; 88. *dz'ian*: 89, 90. *tsjēn*; 175. *t'át*: 176. *t'jēt*; 186. *d'án*: 188. *t'ian*, 189. *djan*: 192. *d'jēn*, 194. *djēn*; 201. *t'át*: 200. *d'iet*; 218. *t'án*: 219, 220. *tjēn*; 271. *dzjwān*: 276, 277. *dzjwēn*; 334. *siang*: 335. *sǐng*; 346. *d'iad*: 347. *djēt*; G 7. *njat*: 9. *njēt*; 50. *liat*: 51. *ljēt*; H 1. *p'iwǎn*: 2. *p'ien*; 29. *p'ian*, 30. *p'ian*: 37. *pien*; 46. *pwán*, 45. *b'ian*: 47. *pien*; 73. *b'iwǎn*: 74. *p'jēn*; 123. *piad*: 124. *pjēd*; 152. *pian*: 154. *pjēn*.

*a ~ ə*:

A 29. *kǎng*: 30. *kəg*; 73. *kjǎng*: 78. *kjəng*; 92. *g'ǎng*: 114. *xiəng*; 153. *kǎng*, 155. *kjǎng*: 163. *kjək*; 169. *kjǎng*: 172. *kəng*, 175. *g'jək*; 229. *kwǎng*: 231. *g'wəng*; 257. *ngǎng*: 258. *ngjəng*; B 64. *djang*: 70. *d'jəng*; 265. *djang*, 264. *t'áng*: 267. *tjəng*; 335. *giak*: 336. *sǐək*; 406. *tjang*: 411. *təng*; 662. *d'jak*: 663. *djək*; C 24. *liang*: 26. *ljəng*; 56. *nǎng*: 57. *njəng*; D 31. *b'wǎng*: 40. *b'əng*, 42. *b'wəg*; 168. *pák*, 169. *pāk*: 170. *pjək*; E 1. *kwán*, 2. *g'wán*, 3—7. *g'wān*, 12. *giwān*, 9. *g'iwān*, *k'iwān*, 13. *giwǎn*: 19. *kwən*, 17. *k'wən*, 22. *giwən*, 21. *kjwən*; 47. *xiwar* and *xiwər*; 53. *kwán*, 54. *kjwǎn*, 55. *k'iwǎn*: 60. *kwən*, 61. *k'wən*; 63. *kwāt*: 67. *kwət*; 72. *g'iat*: 73. *kjət*; 117. *g'iwāt*, 116. *k'iwāt*: 117. *g'iwət*, 120. *kwət*, 119. *k'wət*; 130, 131. *g'ian*: 134. *g'jən*; 143. *ngjan*, 142. *ngjǎn*: 139. *giwən*; 140. *g'wad*, 139. *giwāt*: 141. *giwəd*; 250. *ɣwán*: 251. *xiən*; 259. *iwǎn*: 260. *jwən*; 263. *giwǎn*: 264. *g'iwən*; 280. *jwān*, 281. *jwǎn*: 282. *jwən*; 300. *k'án*, 302. *g'ian*: 303. *g'ən*, 304. *kjən*; 307. *kwāt*, 308. *giwāt*: 310. *giwət*; 314. *kwād* and *kjəd*; 319. *ngwāt*, *ngjwāt* and *ngwət*; 320. *ngjād*: 321. *ngjəd*; 325. *giwǎn*: 326. *giwən*; 332. *g'jǎn*: 331. *kjən*; F 1. *djwān*: 2. *djwən*; 88. *dz'ian*: 95. *siən*; 114. *dz'ian*: 115. *dz'wən*; 152. *dz'wād*: 153. *dz'iwəd*; 158. *siwad* and *siwət*; 161. *d'wán*: 162. *d'wən*; 210. *ts'wán*, 211. *dz'wān*: 214. *tswən*, 213, 214. *tsjwən*; 228, 229. *tjān*: 230, 231. *tjən*; 271. *dzjwān*: 278. *dzjwən*; 310. *tán*: 311. *djēn*, *d'jən*; 337. *ts'iwad*: 338. *swəd*; G 15, 16. *liān*: 17, 18. *ljwən*; 29, 30. *liad*: 49. *ljəd*; H 1. *p'iwǎn*: 3, 4. *pjwən*; 12. *pjwāt*, 14. *p'iwād*: 13. *p'iwət*, 15. *p'iwəd*; 31. *pwán*, 32. *p'wán*, 27. *b'ān*, *b'ian*: 38. *pjwən*, *b'jwən*; 40. *b'iwāt*: 41. *b'iwət*; 58, 59. *b'wād* and *b'wət*; 73. *b'jwǎn*: 75. *pjwən*; 88. *mwāt*, 89. *miat*: 90. *mjwət*, 91. *mjwəd*; 92. *man*: 93. *mwən*; 122. *pjād*: 125. *pjəd*; 148. *b'iwǎn*: 149. *b'jwən*; I 4. *g'áp*: 5. *kəp*; 8. *ám*, 9, 10. *jām*: 15—18. *əm*, 19, 20. *jəm*; 21, 22. *g'ám*: 24—26. *g'əm*; 27. *kiap*: 28. *g'əp*; 47. *k'ám*: 49. *k'jəm*; 60. *g'ap*, 59. *k'iap*: 61. *g'jəp*; 64. *ngam*, 65. *ngjəm*: 66. *ngjəm*; 74. *g'iap*: 77. *g'əp*; K 1. *tsám*, 2. *dz'am*, 5. *tsjām*: 7. *tsəm*, 8. *tsjəm*; 3. *djām*: 4. *tjəm*, 9, 10. *tjəm*; 20. *tjap*: 23. *tjəp*;

36. *tsám*: 37. *ts'iam*; 38. *dz'iap*: 39. *səp*; 40. *d'am*, 41. *diam*: 43. *diam*; 57. *d'am*, 58. *iam*: 59. *d'am*; 64, 65. *tsiam*: 66. *tsiam*; 72. *dz'am*: 73. *də'iam*; 77. *dz'am*: 78. *ts'iam*.

*a ~ ε*:

A 184. *káng*: 189. *g'weng*; 229. *kwáng*: 230. *g'weng*; 330. *k'wák*: 331. *kək*; E 9. *k'íwan*, 12. *gíwan*: 20. *k'íwen*; 84. *kwád*, 83. *kiwat*: 82. *g'wet*; 124. *kwán*, 125. *g'wan*: 127. *gíwen*; 128. *k'án*, 129. *kian*: 137. *ngen*; 191. *·iän*: 193. *·ien*; 236. *g'wát*: 237. *g'wet*; I 8. *·ám*: 12. *·em*; 9. *·iam*: 13, 14. *·iem*; 21, 22. *g'ám*: 23. *g'em*; 40. *giam*: 41. *g'em*; 60. *g'ap*, 59. *k'iap*: 61. *g'iep*; 72. *kiam*: 73. *g'em*; 74. *g'iap*: 75. *g'ep*; K 20. *liap*: 22. *liap*; 24. *siam*: 25. *sem*.

*a ~ o*:

A 106. *ngák*: 108. *ngók*; 120. *g'ák*: 121. *g'ók*; 239. *g'áng*: 242. *kóng*; B 165. *tsiak*: 187. *síok*; 265. *díang*, 264. *t'áng*: 269. *díóng*; 272. *liak*: 273. *liok*; 288. *síak*: 292. *síóg*; 306. *t'iang*, 307. *t'iang*: 308. *t'ióng*; 416. *liag*: 420. *tióg*, 417, 419. *d'ióg*; 450. *dzíak*, 454. *ziag*: 452. *síók*, 456. *síog*; 518, 519. *tsiak*: 521. *tsiók*; 585. *t'íak*: 586. *d'íók*; C 3. *níang*: 4. *nóng*; D 18. *mág*: 21. *móg*; 160. *mág*: 161. *míóg*; 162, 163. *mág*: 164. *móg*, 165. *míog*.

*a ~ u*:

A 14. *χák*: 15. *χíuk*; 20. *g'ǎng*: 25. *g'ǔng*; 51. *g'ǎng*: 54. *kǔng*; 73. *kǐǎng*, 77. *k'íwang*: 79. *kíung*, 80. *k'íung*; 92. *g'ǎng*: 95. *kǔng*; 169. *kǐǎng*: 173. *g'íǔng*; B 46. *d'ǎng*, 44. *t'ǎng*: 56. *tǔng*; 119. *t'ák*: 123. *tǔk*; 120. *d'ák*: 124. *d'ǔk*; 130. *d'áng*: 131. *d'ung*; 141. *tiang*: 143. *tiung*; 151. *liak*: 155. *tǔk*; 198. *táng*: 199. *d'ung*; 228. *d'ǎk*: 230. *tǔk*; 361. *ts'áng*: 362. *ts'ung*; 405. *d'áng*, 407, 408. *liang*: 414. *diung*; 406. *tiang*: 413. *d'ǔng*; 498. *sák*: 500. *síuk*, 499. *síuk*; 507. *liak*: 509. *d'íuk*; D 1. *b'ǎng*: 3. *b'ung*; 6. *mǎng*: 12. *mung*; 46. *pǎng*: 48. *p'íung*; 62. *pǎng*: 63. *p'íung*; 79. *mǎng*: 81. *mǔng*; 83. *b'íwang*: 87. *píung*; 89. *b'ǎng*: 90. *b'ǔng*; 92. *p'ák*: 94. *p'uk*; 95. *pǎng*: 97. *p'íung*, 98. *b'íung*; 178. *mág*: 180. *míǔg*.

*e ~ ε*:

B 101. *t'ǐēng*: 102. *d'ēng*; E 64. *kiet*: 69. *gíwet*; 225. *kien*: 224. *kēn*.

*e ~ ə*:

A 145. *kíwəg*: 148. *kíwəg*; 288—291. *·ək*: 293. *·iək*; 296. *kíek*: 298. *kíək*; 334. *g'íwəg*: 335. *g'íəg*; 336. *g'əg*: 337. *q'íəg*; B 10. *liēng*: 11. *d'íəng*; 20. *liēng*: 21. *d'íək*; 27. *d'íēng*: 28. *t'íəng*; 77. *d'ieg*: 79. *d'əg*; 232. *dz'íəg*: 233. *tsíəg*; 266. *tieng*: 267. *liəng*; 394, 395. *tiəg*: 396, 397. *liəg*; 445. *díək*: 447. *d'ieg*: 448. *d'əg*; 468. *síəg*: 469. *síəg*; 510, 511. *d'ieg*: 513. *liəg*; 630. *díəg*: 631. *liəg*; 633. *síəg*: 632. *tsíəg*; C 64. *lieng*: 65. *liəng*; E 36. *g'íwen*: 37. *g'wən*; 57. *kíēn*, 58. *g'ien*: 60. *kwən*, 62. *k'wən*; 64. *kiet*: 67. *kwət*; 118. *g'íwet*: 120. *kwət*, 119. *k'wət*; 214, 215. *·iēn*: 216. *·iən*; 265. *·iēn*: 266. *·íwən*; 283. *·ēn*: 284. *·əd*; F 89. *tsíēn*: 95. *síən*; 121. *dziwēn*: 123. *dziwən*; 232. *d'ien*: 231. *liēn*; 276. *dziwēn*: 281. *síən*; 288. *d'iet*: 289. *t'íəd*; 305. *síēn*: 306. *síən*; 320. *tsíēn*: 321, 322. *ts'íən*; H 74. *p'íēn*: 75. *píwən*; 115. *píēd*: 117—119. *píwət*; 116. *píēd*: 120, 121. *píwət*; 124. *píēd*: 125. *píəd*, 126. *píwəd*; 141. *píēd*: 142. *píwəd*.

*e* ~ *o*:

A 96. *k'ǐəg*: 99. *k'ǐog*; 109. *ngəg*: 113. *ngiog*; 143, 144. *kwəg*, 145. *k'ǐwəg*: 149. *kog*, 150. *kǐog*; 193—195. *g'ieg*, 192. *kǐəg*: 197. *kǐog*, 198. *kiog*, 199. *kǐóg*; B 58, 59. *ǐǐəg*: 61. *d'ǐóg*; 85. *dǐəng*: 89. *ǐ'ǐóng*; 147. *dǐəng*: 148. *ǐǐóng*; 174. *ts'ǐəg*: 182. *tsóg*; 209. *sieng*: 208. *sog*; 261. *siek*: 262. *śiok*; 331. *d'ǐəng*, 330. *t'ǐəng*: 332. *d'óng*; 479. *d'ieg*: 486. *d'ǐóg*; 578. *dǐəg*: 579. *dǐog*; D 129. *b'əg*: 131. *b'óg*.

*e* ~ *u*:

A 129. *kǐəng*, 130. *kieng*: 131. *g'ǔng*; 210, 211. *k'ien*: 214. *k'ung*, 215. *k'ǔng*; 264. *ǎng*: 265. *ung*; 283. *g'ieg*: 284, 285. *gǐüg*; B 8. *ǐǐəng*: 12. *tung*; 54. *tǐəng*: 56. *tǔng*; 85. *dǐəng*, 88. *dǐəng*: 90. *dǐung*; 112. *tieng*: 115. *d'ǔng*; 113. *ǐǐəng*: 116. *ǐǐung*, 118. *dǐung*; 154. *t'iek*: 155. *tǔk*; 229. *tiək*: 230. *tǔk*; 232. *dz'ǐəg*: 231. *dz'ǔk*; 375. *t'ien*: 376. *ts'ung*; 410. *dǐəng*: 414. *dǐung*; 442. *tsǐəng*: 443. *ts'ung*; 520. *tsǐək*: 523. *tsǐuk*; C 31. *lieng*: 32. *lung*; D 2. *pəng*: 3. *b'ung*; 8, 9. *mieng*: 11, 12. *mung*; 28. *mieng*: 29. *mung*; 173, 174. *məg*: 175. *mug*.

*ε* ~ *ə*:

A 83. *g'eg*: 84. *g'ǐəg*; 230. *g'wəng*: 231. *g'wəng*; E 20. *k'ǐwən*: 22. *gǐwən*; 74. *kəd*, 75. *kǐəd*: 76, 77. *kǐəd*; 137. *ngen*: 134. *g'ǐən*; 182. *g'en*: 183. *k'wən*; 275. *g'ǐən*, 276. *kǐər*: 277. *kǐər*; F 307. *sər* and *sǐər*; 326 *dz'er*: 324. *dz'ǐər*; H 68. *mǐən*: 66, 67. *mwən*, 69. *mǐwən*; I 12. *ǎm*, 13, 14. *ǐəm*: 15—18. *əm*, 19, 20. *ǐəm*; 23. *g'em*: 25. *g'am*; 61. *g'ǐəp* and *g'ǐəp*; 75, 76. *g'əp*: 77. *g'əp*; K 22. *ǐǐəp*: 23. *ǐǐəp*; 26. *d'em*: 28. *d'am*, 29. *d'ǐəm*; 27. *dz'ǐəm*: 31. *śǐəm*.

*e* ~ *o*:

A 16, 17. *ǐǐəg*: 18. *ǐǐog*; 97. *k'ǐəg*: 99. *k'ǐog*, 101. *g'ǐog*; 138. *ǐǐəg*: 139. *ǐǐóg*; 147. *k'ǐəg*: 150. *kǐog*; B 2. *dǐəg*: 3. *ǐǐóg*; 106. *t'ǐəg*: 107. *t'ǐog*; 176. *tsəg*, 177. *dz'əg*, 179. *tsǐəg*: 183. *tsǐog*; 247. *ǐ'ǐəg*: 253, 254. *ǐǐog*; 267. *ǐǐəng*: 269. *dǐóng*; 300. *dǐək*: 301. *dǐók*; 382. *dzǐəg*: 383. *ts'ǐog*, 384. *śǐog*, 385. *zǐóg*; 401. *śǐəg*: 402. *zǐóg*; 501. *śǐəg*: 502. *sog*; 513. *ǐǐəg*: 515. *d'óg*; 532. *d'ǐəg*: 533. *dǐóg*; 537. *ts'əg*: 538. *ts'og*; 570. *d'əg*: 571. *tog*; 587. *ǐǐəg*: 588. *tog*, 589. *ǐǐóg*; 597. *dǐəg*: 598. *dǐóg*; 619. *ǐ'ǐəg*: 620. *tǔg*; 623. *ǐ'ǐəg*: 624. *ǐ'ǐóg*; 644. *tsǐəg*: 645. *tsóg*; 647. *tsǐəg*: 650. *dz'óg*; D 145. *p'wəg*: 146. *p'óg*.

*ə* ~ *u*:

A 78. *kǐəng*: 79. *kǐung*; 172. *kəng*: 173. *g'ǐǔng*; 267. *kwəng*: 268. *kǐǔng*; 326. *kǐək*: 327. *gǐuk*; 368. *g'ǐwəg*: 367. *kǐǔg*; B 411. *təng*: 413. *d'ǔng*; 470. *d'əng*, 471. *dǐəng*: 472. *t'ung*; 505. *dǐəng*: 506. *ǐǐung*; 542. *ǐǐəng*: 543. *ǐǐung*; 603. *d'əng*: 604. *dǐung*; 652. *tsǐək*: 653. *śǐuk*; 684. *d'ək*: 685. *d'uk*; C 61. *ǐǐəng*: 62. *ǐǐung*; D 10. *məng*: 11, 12. *mung*; 122. *pwəg*, 123, 124. *b'wəg*: 125. *b'ǐǔg*; 133, 134. *b'wək*: 135, 136. *b'ǐǔk*; 179. *mwəg*: 180. *mǐǔg*; 188. *b'wəg* and *b'ǔg*.

*o* ~ *u*:

A 43. *ok*: 44. *ǔk*; 63. *kóng*: 64. *g'ung*; B 89. *ǐ'ǐóng*: 90. *dǐung*; 103. *tók*, 104. *d'ók*: 105. *ǐǐuk*; 114. *d'ǐóng*: 117. *ǐ'ǐung*; 122. *tǐók*: 123. *tǔk*; 216. *d'óng*: 217, 218. *t'ung*; 259. *tsǐok*: 246. *ǐǐuk*; 269. *dǐóng*: 270. *dǐung*; 369. *śǐók*: 370. *suk*; 364. *tsǐók*: 365.

*ts'ïuk*: 389. *tóng*: 390. *tung*; 475. *îïok*: 477. *îïuk*; 508. *d'ïók*: 509. *d'ïuk*; 521. *ts'ïók*, 522. *ts'ïók*: 523. *ts'ïuk*; 594. *d'ïók*: 596. *d'ïuk*; C 66. *nóng*: 67. *n'ung*; D 4. *p'ïók*: 5. *b'ïuk*; 49. *b'ok*: 51. *puk*; 185. *p'ïóng*: 187. *p'ïung*.

*Combined alternations.*

We now revert to the question posed on p. 90 above. Is it reasonable to combine words which offer, not one alternation but two or more? Let us take the third example given there: E 93. *g'át* »how»: 94. *k'ïär* »how». Semantically the combination is very good; but we have to accept no less than four alternations, concerning every element of the two words. We have attested above the indubitable existence of the four alternations: *g' ~ k'* (very common); *0 ~ ï* (very common); *á ~ a* (very common); *t ~ r* (quite certain and fairly common); are we then authorized to pose the affinity of the two words »how»: *g'át*: *k'ïär*, which supposes those four alternations?

Theoretically, I should say that we are; but I want to emphasize that here, as in all linguistics, the conclusiveness of the argumentation depends upon the question whether we can find many parallel examples, showing the same combination of alternations. If we can, then I think nobody can deny the correctness of our deductions. That is why I wish to give here some fairly extensive examples of double alternations (in order to simplify matters I limit the demonstration to two elements: principal vowel and final consonant):

Alternations *a ~ e* and *ng ~ k ~ g* (*ang ~ ek*, *ang ~ eg*, *ak ~ eng*, *ak ~ eg*):

B 407. *îiang*: 415. *d'ïek*; C 9. *îiang*: 11. *nëk*; A 140. *k'iwang*: 145. *k'iwëg*; 186. *k'iang*: 192. *k'ïeg*; B 5. *šiang*: 6. *s'ïeg*; 48. *d'ïang*: 58. *î'ïeg*; D 127, 128. *b'ïäng*: 129. *b'ëg*, 130. *p'ïeg*; B 333. *î'ïak*: 330. *t'ïëng*; 335. *s'ïak*: 334. *s'ïëng*.

Alternations *a ~ ə* and *ng ~ k ~ g* (*ang ~ ək*, *ang ~ əg*, *ak ~ əg*, *ag ~ əng*):

A 155. *k'ïäng*: 163. *k'ïək*; 168. *k'iang*, 169, 170. *k'ïäng*: 175. *g'ïək*; B 427. *d'iang*: 428. *d'ïək*; A 73. *k'ïäng*: 84. *g'ïæg*; 92. *g'ïäng*: 97. *k'ïæg*; 135. *k'ïäng*: 137. *g'ïæg*; B 1. *d'iang*: 2. *d'ïæg*; 66. *d'iang*: 79. *d'æg*; 108. *s'iang*: 111. *s'ïæg*; 162. *dz'iang*: 177. *dz'æg*; 210. *d'äng*: 214. *d'ïæg*; 243. *î'iang*: 247. *î'ïæg*; 381. *dz'iang*: 382. *dz'ïæg*; 399. *s'iang*: 401. *s'ïæg*; 427. *d'iang*: 429. *î'ïæg*; 535. *ts'iang*: 540. *z'ïæg*; 639. *s'iang*: 640. *s'ïæg*; B 97. *d'ïak*: 99. *d'ïæg*; 119. *t'ák*: 126. *t'ïæg*; 444. *d'ïak*: 448. *d'æg*; 498. *sák*: 501. *s'ïæg*; 507. *î'ïak*: 513. *î'ïæg*; 637. *t'ák*: 638. *d'æg*; B 207. *dz'äg*: 206. *dz'æng*; 416. *î'ïag*: 411. *täng*; D 18. *mäg*: 10. *mæng*.

Alternations *a ~ o* and *ng ~ k ~ g* (*ang ~ ok*, *ang ~ og*, *ak ~ og*, *ag ~ ok*):

A 118. *k'äng*: 121. *g'ök*; 201. *ïang*: 205. *ïok*; 250. *käng*: 256. *k'ök*; B 265. *d'iang*: 273. *îïok*, 275. *d'ïök*; 286. *s'iang*, 287. *s'iang*: 289. *s'ïok*; C 16. *läng*: 19. *liök*; 24. *liang*: 27. *liök*; D 45. *p'äng*: 49. *b'ök*; A 118. *k'äng*: 122, 123. *kog*; 186, 187. *k'iang*: 197.

*kjog*, 199. *kjôg*; B 1. *djang*: 3. *îôg*; 48. *d'jang*: 61. *d'ôg*; 242. *djang*: 250—252. *djog*; 265. *djang*: 280. *djog*, 278. *îôg*; 307. *î'jang*: 312. *t'jog*, 314. *t'jôg*; 361. *ts'ang*: 367. *ts'ôg*; 381. *dziang*: 385. *zjôg*; 399. *sjang*: 402. *zjôg*; 407. *îiang*: 418. *d'jôg*; 406. *tjang*: 420. *tjôg*; 440. *d'ang*: 441. *tog*; 554. *t'jang*: 557. *t'ôg*; C 14. *liang*: 15. *liog*; 16. *lâng*: 20, 21. *liog*; 69. *lâng*: 70. *log*, 71. *lôg*; D 6. *măng*: 20. *mog*; 45. *p'ăng*: 53, 54. *b'ôg*; 46. *pjăng*: 55. *pjog*; 62. *pjăng*: 66. *p'jog*; 67. *măng*, 70. *măng*: 71. *mjog*; 79, 80. *măng*: 82. *mjog*; 127, 128. *b'jăng*: 131. *b'ôg*; A 120. *g'ăk*: 122, 123. *kog*, 124. *kôg*; B 119. *t'ăk*: 127. *tôg*; 165. *tsjak*: 183. *tsjog*; 271. *t'ăk*: 279. *tiôg*; 272. *îjak*: 278. *îjôg*; 288. *sjak*: 292. *sjôg*; 323. *sjak*: 319. *ts'jog*; 335. *sjak*: 337. *sjôg*; 450. *dziak*: 456. *sjog*; 581. *dz'ăk*: 583. *tsjog*; B 454. *zjag*: 452. *sjôk*.

Alternations *a* ~ *u* and *ng* ~ *k* ~ *g* (*ang* ~ *uk*, *ak* ~ *ung*, *ag* ~ *ung*):

A 266. *gijwang*: 271. *g'juk*; B 554. *t'jang*: 556. *d'uk*; D 89. *b'ăng*: 94. *p'uk*; A 90. *χjăk*: 88. *χjung*; B 120. *d'ăk*: 116. *îjung*; 119. *t'ăk*: 115. *d'ŭng*; D 91. *păk*: 90. *b'ŭng*; 100. *păk*: 97. *p'jung*, 98. *b'jung*; D 18. *măg*: 11. *mung*.

Alternations *e* ~ *ə* and *ng* ~ *k* ~ *g* (*eng* ~ *ek*, *eng* ~ *eg*, *ek* ~ *eg*):

A 159. *g'ien*: 162. *k'ək*; B 8. *îjeng*: 13. *îjak*; 53. *d'ien*, 54. *tjeng*: 57. *djak*; 68. *tieng*: 74. *təg*; A 136. *g'eng*: 137. *g'jag*; B 101. *t'jeng*: 106. *t'jag*; 110. *sjeng*: 111. *sjag*; 355. *seng*, 356, 357. *sjeng*: 354. *dz'jag*, 353. *tsjag*; 445. *djek*: 448. *d'ag*; 520. *tsjek*: 524. *dzjag*; 531. *tək*: 532. *d'jag*.

Alternations *e* ~ *o* and *ng* ~ *k* ~ *g* (*eng* ~ *ok*, *eng* ~ *og*, *ek* ~ *og*, *eg* ~ *ok*):

A 202. *îjeng*: 205. *îok*; B 101. *t'ien*: 104. *d'îok*; 112. *tieng*: 122. *tjôk*; A 8. *kjeng*: 13. *kog*; 61. *g'ien*: 65. *g'ôg*; 93. *g'ien*: 102. *k'jôg*; 210, 211. *k'ien*: 220. *k'jog*; B 53. *d'ien*, 54. *tjeng*: 61. *d'îog*; 101. *t'jeng*: 107. *t'jog*; 112. *tieng*: 127. *tôg*; 340. *d'jeng*: 341. *tieng*: 342. *d'jôg*; 412. *t'ien*: 418. *d'jôg*; C 44. *lieng*: 45. *lôg*; B 154. *t'iek*: 159. *tog*; 239. *siek*: 241. *sjôg*; 415. *djek*: 418. *d'jôg*; 642. *d'iek*: 643. *djôg*; 658. *djek*: 659. *djog*; C 39. *liek*: 43. *lôg*; D 15—17. *miek*: 21. *môg*; 159. *miek*: 161. *mjôg*; A 109. *ngjeng*: 108. *ngjôk*; B 510. *d'ieg*: 508. *d'îok*; 563. *d'jeng*: 562. *d'îok*; 578. *djeng*: 576. *djok*.

Alternations *e* ~ *u* and *ng* ~ *k* ~ *g* (*ek* ~ *ung*, *eg* ~ *ung*, *eg* ~ *uk*):

B 520. *tsjek*: 516. *tsjung*; D 15, 16. *miek*: 11. *mung*; A 24. *kjeng*: 25. *g'ŭng*; 193. *g'ieg*: 191. *kjung*; B 58. *îjeng*: 56. *tŭng*; D 88. *b'jeng*: 87. *pjung*; B 479. *d'ieg*: 477. *îjuk*; 510. *d'ieg*: 509. *d'juk*.

Alternations *ə* ~ *o* and *ng* ~ *k* ~ *g* (*əng* ~ *ok*, *əng* ~ *og*, *ək* ~ *og*, *əg* ~ *ok*):

B 267. *îjang*: 274. *îjôk*; 298, 299. *d'jang*: 301. *djôk*; 470. *d'ang*, 471. *djang*: 475. *îjok*; 603. *d'ang*: 605. *djok*; C 26. *liang*: 27. *liok*; B 411. *tang*: 417. *d'ôg*; 470. *d'ang*, 471. *djang*: 483, 486. *d'jôg*; 528. *djang*: 533. *djôg*; 603. *d'ang*: 606. *d'jog*; D 10. *mang*: 21. *môg*; A 162. *k'ək*: 166. *kog*; 326. *kjak*: 328. *g'jôg*; B 57. *djak*: 61. *d'jôg*; 317. *ts'jak*: 319. *ts'jog*, 320. *dz'jog*, 321. *dz'jôg*; 336. *sjak*: 337. *sjôg*; 474. *îjak*: 483. *d'jôg*; 539. *sjak*: 541. *sjôg*; 569. *tək*: 571. *tog*; 572. *tsjak*: 573. *dz'jôg*; C 22. *liak*: 23. *log*; B 106. *t'jag*: 104. *d'îok*; 126. *t'jag*: 122. *tjôk*; 179. *tsjag*: 187. *sjok*; 329. *sjag*: 328. *sjôk*; 352. *t'ag*: 350. *djôk*; 597. *djag*: 594. *djôk*; D 172. *b'wag*: 171. *pjôk*.

Alternations *a* ~ *u* and *ng* ~ *k* ~ *g* (*əng* ~ *uk*, *əng* ~ *ug*, *əg* ~ *ung*, *əg* ~ *uk*):

D 40. *b'əng*: 41. *p'ĩk*; 132. *pəng*: 135. *b'ĩk*; A 181. *g'əng*: 182. *kĩg*; D 132. *pəng*: 137. *p'ĩg*; A 84. *g'ĩg*: 80. *k'ĩung*, 79. *kĩung*; 97. *k'ĩg*: 95. *kũng*; B 126. *t'ĩg*: 115. *d'ũng*; 329. *sĩg*: 326. *sĩung*; 524. *dzĩg*: 516. *tsĩung*, 517. *dz'ĩung*; 628. *t'ĩg*, 629. *t'ĩg*: 626. *t'ũng*, 625. *t'ung*, 627. *tũng*; 654. *tsəg*: 655. *şũng*; B 106. *t'ĩg*: 105. *ĩuk*; 126. *t'ĩg*: 123. *tũk*, 125. *t'ĩuk*; 513. *ĩg*: 509. *d'ĩuk*; 597. *dĩg*: 596. *dĩuk*; D 42. *b'wəg*: 41. *p'ĩk*.

Alternations *o* ~ *u* and *ng* ~ *k* ~ *g* (*ok* ~ *ung*, *og* ~ *ung*, *og* ~ *uk*, *ok* ~ *ug*):

A 41. *kók*: 40. *g'ung*; 128. *χok*: 127. *χung*; B 76. *tók*: 72. *tĩung*; 122. *tĩók*: 115. *d'ũng*; 328. *sĩók*: 326. *sĩung*; 605. *dĩók*: 604. *dĩung*; A 65. *g'óg*: 64. *g'ung*; 101. *g'ĩog*: 95. *kũng*; 220. *k'ĩog*: 213. *k'ung*, 216. *k'ĩung*; 221. *kóg*: 214. *k'ung*; 225. *χĩog*: 222. *χĩung*; B 127. *tóg*: 115. *d'ũng*; 225. *d'óg*, 226. *t'óg*: 223, 224. *dĩung*; 417. *d'óg*, 417, 419. *d'ĩóg*: 413. *d'ũng*; 494. *tsĩóg*: 490. *tsung*; 481. *t'óg*: 472. *t'ung*; 606. *d'ĩog*, 607. *t'ĩog*: 604. *dĩung*; D 21. *móg*: 11. *mung*; 55. *pĩog*: 48. *p'ĩung*; 66. *p'ĩog*: 63. *p'ĩung*; 74. *mog*: 73. *mũng*; 82. *mĩog*: 81. *mũng*; A 272. *kĩóg*: 270. *k'ĩuk*; 328. *g'ĩóg*: 327. *giuk*; B 107. *t'ĩog*: 105. *ĩuk*; 127. *tóg*: 123. *tũk*, 125. *t'ĩuk*; 159. *tog*, 160. *tĩóg*: 155, 156. *tũk*; 253, 254. *ĩog*: 246. *ĩuk*; 367. *ts'óg*: 365. *ts'ĩuk*; 486. *d'ĩóg*: 477. *ĩuk*; 515. *d'óg*: 509. *d'ĩuk*; 538. *ts'og*: 536. *tsũk*; 550. *dz'óg*: 549. *dz'uk*; 557. *t'óg*: 556. *d'uk*; C 42, 43. *lĩóg*: 40. *luk*; A 280, 281. *kĩók*: 284, 285. *giũg*.

Alternations *a* ~ *e* and *n* ~ *t* ~ *d* (*an* ~ *et*, *ad* ~ *et*, *at* ~ *en*):

E 230. *g'ĩăn*: 234. *g'ĩět*; 252. *·án*: 255. *·iět*; F 346. *d'iad*: 347. *ĩiět*; 297. *tsat*: 296. *dz'ĩen*.

Alternations *a* ~ *ə* and *n* ~ *t* ~ *d* ~ *r* (*an* ~ *ət*, *an* ~ *əd*, *an* ~ *ər*, *at* ~ *ən*, *at* ~ *əd*, *at* ~ *ər*, *ad* ~ *ən*, *ad* ~ *ət*, *ad* ~ *ər*):

E 53. *kwán*: 67. *kwət*; 259. *·iwán*: 261. *·iwət*; F 107. *ts'wan*: 111. *dz'wət*; 132. *dĩwan*: 133. *d'wət*; H 111. *p'ĩwán*: 120, 121. *pĩwət*; E 302. *g'ian*: 314. *kĩəd*; F 210. *ts'wán*: 215. *dzĩwəd*; H 112. *pĩwán*: 126. *pĩwəd*; E 1. *kwán*, 2. *g'wán*, 3. *g'wan*: 25, 26. *g'wər*; 40. *χán*: 45. *χĩər*; 90. *giwán*: 92. *giwər*; 135. *χian*: 136. *χĩər*; 149. *kwán*, 150. *g'wán*: 152. *giwər*; 157. *·wan*: 162. *·wər*; 199. *χán*: 200. *χĩər*; F 27, 28. *tsian*: 34. *tsiər*, 35. *dz'ĩər*; 172. *twán*: 180. *twər*; 304. *tsian*: 306, 307. *siər*; G 1. *nan*: 10. *nĩər*; H 45. *b'ian*: 52. *pĩər*; E 63. *kwát*: 60. *kwən*, 61, 62. *k'wən*; 139. *giwát*: 138. *giwən*; 184. *kĩwát*: 183. *k'wən*; 305. *kát*: 303. *g'ən*; F 109. *tswát*: 108. *tswən*; 164. *tĩwat*: 162. *d'wən*; H 39. *pĩat*, *b'iat*: 38. *pĩwən*, *b'ĩwən*; 136. *pwát*: 135. *pwən*; E 72. *g'iat*: 76. *kĩəd*; 139. *giwát*: 141. *giwəd*; 244. *kĩat*: 245. *kəd*; 305. *kát*: 314. *kĩəd*; 319. *ngĩwát*: 321. *ngĩəd*; G 26. *lát*, 27. *lĩat*: 31. *lĩəd*; H 11. *p'wát*, 12. *pĩwát*: 15. *p'ĩwəd*; 114. *piat*: 125. *pĩəd*; E 91. *giwát*: 92. *giwər*; 93. *g'át*: 94. *k'ĩər*; 305. *kát*: 318. *kər*; F 4. *tĩwat*: 6. *dĩwər*; 30. *dz'iat*: 34. *tsiər*, 35. *dz'ĩər*; 257. *sĩat*: 258. *siər*; E 24. *giwad*: 22. *giwən*; 140. *g'wad*: 138. *giwən*; 311. *g'ád*: 303. *g'ən*; F 279. *tswád*: 278. *dziwən*; E 103. *kád*: 102. *k'ĩət*; 315. *kĩwád*: 310. *giwət*; F 134. *t'wád*: 133. *d'wət*; 158. *şĩwad* and *şĩwət*; H 14. *p'ĩwád*: 13. *p'ĩwət*; H 58, 59. *b'wád* and *b'wət*; 122. *pĩad*: 117, 118. *pĩwət*; E 24. *giwad*: 28. *giwər*; 103. *kád*: 104. *g'ĩər*; 247. *kád*: 248. *k'ər*; F 4. *tĩwad*: 6. *dĩwər*; 22, 23. *ĩiad*: 24, 25. *t'ĩər*; 39. *dĩwad*: 40. *ĩĩwər*; 93. *tsiad*: 94. *tsiər*.

Alternations  $e \sim \text{ə}$  and  $n \sim t \sim d \sim r$  ( $en \sim \text{əd}$ ,  $en \sim \text{ər}$ ,  $et \sim \text{ən}$ ,  $et \sim \text{əd}$ ,  $et \sim \text{ər}$ ):

E 283.  $\text{ʔn}$ : 284.  $\text{ʔəd}$ ; H 97.  $m\dot{i}\ddot{e}n$ : 108.  $m\dot{i}\ddot{e}d$ ; 113.  $b'\dot{i}\ddot{e}n$ : 125.  $p\dot{i}\ddot{e}d$ ; E 214.  $\text{.}\dot{i}\ddot{e}n$ : 217.  $\text{.}\dot{i}\ddot{e}r$ ; F 89.  $ts\dot{i}\ddot{e}n$ : 94.  $ts\dot{i}\ddot{e}r$ ; 98.  $ts\dot{i}\ddot{e}n$ : 99.  $ts\dot{i}\ddot{e}r$ ; 196, 197.  $\acute{s}\dot{i}\ddot{e}n$ : 198.  $\acute{s}\dot{i}\ddot{e}r$ ; 305.  $\acute{s}\dot{i}\ddot{e}n$ : 306, 307.  $\acute{s}\dot{i}\ddot{e}r$ ; G 37, 38.  $l\dot{i}\ddot{e}n$ : 39.  $l\dot{i}\ddot{e}r$ ; H 18.  $b'\dot{i}\ddot{e}n$ : 21.  $p\dot{i}\ddot{e}r$ , 22.  $p'\dot{i}\ddot{e}r$ ; 47.  $p\dot{i}en$ : 52.  $p\dot{i}\ddot{e}r$ ; 95.  $m\dot{i}\ddot{e}n$ : 110.  $m\dot{i}\ddot{e}r$ ; F 53.  $d'\dot{i}et$ : 50.  $t'\dot{i}en$ ; 288.  $d'\dot{i}et$ : 289.  $t'\dot{i}əd$ ; E 273.  $k'\dot{i}\ddot{e}t$ : 274.  $k\dot{i}\ddot{e}r$ ; F 21.  $t\dot{i}\ddot{e}t$ : 25.  $t'\dot{i}\ddot{e}r$ ; 32.  $ts\dot{i}et$ , 33.  $ts'\dot{i}et$ : 34.  $ts\dot{i}\ddot{e}r$ , 35, 36.  $dz'\dot{i}\ddot{e}r$ ; 169.  $d'\dot{i}\ddot{e}t$ : 170.  $t\dot{i}\ddot{e}r$ ; 176.  $t'\dot{i}\ddot{e}t$ : 178.  $t\dot{i}\ddot{e}r$ ; 200.  $d'\dot{i}et$ : 202, 203.  $t\dot{i}\ddot{e}r$ ; 237.  $d'\dot{i}\ddot{e}t$ : 238.  $d'\dot{i}\ddot{e}r$ ; 349.  $dz'\dot{i}\ddot{e}t$ : 351.  $ts\dot{i}\ddot{e}r$ ; H 19.  $p'\dot{i}\ddot{e}t$ : 22.  $p'\dot{i}\ddot{e}r$ .

I have quoted my materials so extensively in order to prove, by these ample series of parallel cases, that we are perfectly justified in operating with combined alternations. Hence the examples on p. 90 above:  $k'ung$ :  $\chi iog$ ;  $\acute{d}iang$ :  $t\acute{o}k$ :  $d\acute{e}g$ ;  $g'\acute{a}t$ :  $k'\dot{i}\ddot{e}r$ ;  $ng\dot{i}\ddot{a}n$ :  $g'wad$ ;  $s\acute{a}n$ :  $dz'w\acute{e}r$  are far from being so impossible as they look at first sight. They fall within series of well-established alternations, and there is in principle nothing against considering them as being polar extremes within large and richly varied word families.

#### FINAL REMARKS.

There are two more questions which should be touched upon before finishing this preliminary investigation of Chinese word families.

One of them is this: are all the materials adduced here *homogeneous*, i. e. do they belong to one and the same language, one Archaic dialect? If not, if there are certain words which come, so to speak, from a side-track, which have been incorporated in literature by picking up dialectal words outside the main branch of the language and in their dialectal phonetic garb, then this would necessarily disturb our circles and endanger our results. I must frankly point out that in a few cases there is a certain risk of such a source of error. Indeed, I have inserted in my tables half a dozen words which the ancient sources directly indicate as being dialect words (such are B 496, B 530, F. 243, H 9). But on the whole this risk is very small, since I have operated mainly with the most common words of the language (practically all of them are such as are to be found in Soothill's little Pocket Dictionary).

The second question concerns the grammatical nature of the alternations. We have seen thousands of examples in which the language by their aid has formed parallel words for the same notion or phonetically more or less differentiated words for kindred notions. But do the alternations not sometimes serve as *express-*



sions for purely grammatical functions in a narrower sense? They certainly do, but this is an extremely complicated topic to which I hope to revert in another work. I shall point out here, merely as suggestive examples, a series of cases, in which our alternations studied above are expressions for different parts of speech or similar grammatical distinctions.

- B 517. *tsiung* a follower (noun): 517. *dz'jung* to follow (verb);  
 A 340. *kōg* a school (noun): 340. *g'ōg* to study (verb);  
 D 122. *pwæg* back (noun): 123, 124. *b'wæg* to turn the back (verb);  
 B 345. *tieng* («a fixer») anchor (noun): 347. *d'ien* to fix (verb);  
 B 353. *tsiæg* child, son (noun): 354. *dz'iaeg* to breed, beget (verb);  
 E 271. *kán* shield (noun): 272. *g'án* to ward off (verb);  
 H 38. *piwən* to divide (verb): 38. *b'iwən* a part (noun);  
 B 134. *tìóng* middle, centre (noun): 135. *d'ìóng* the middle one (adj.);  
 B 191. *tiàng* to become long (verb): 191. *d'iang* long (adj.);  
 B 248. *tìog* dawn (noun): *d'ìog* («the matutinal one», adj. =) morning ceremony, audience;  
 B 649. *tsōg* early morning (noun): 650. *dz'ōg* black (adj.);  
 E 32. *kán* dry (adj.): 32. *g'ian* (heat and light:). Heaven (noun);  
 E 129. *kian* to see (active): 129, 130. *g'ian* to be seen, appear (passive);  
 F 325. *ts'iar* (equal:) mate, wife (noun): 324. *dz'iar* equal (adj.);  
 H 152. *pian* side (noun): 153. *p'ian* oblique (adj.);  
 K 45. *siəp* moist, wet (adj.): 46. *dziəp* marsh (noun);  
 F 85. *tìəd* to go to (verb): 86. *tìəd* to cause to go to (causative verb to the preceding);  
 F 96. *t'iwət* to come out, go out (verb): 97. *t'iwət* to eliminate, degrade (causative verb to the preceding);  
 B 445. *dìək* to change (verb): 445. *dìəg* (changeable:) easy (adj.);  
 A 323. *·ák* bad (adj.): 323. *·ág* to hate (verb);  
 F 127, 128. *siwət* to lead (verb): *siwəd* leader (noun);  
 F 341. *siwat* to speak (vb. intrans.): *siwad* to speak to, to address (vb. trans.);  
 B 29. *d'ák* to measure (verb): 29. *d'ág* a measure (noun);  
 B 428. *d'iak* to eat (verb): 428, 431. *dziæg* food (noun);  
 D 154. *b'ìók* to return (verb): 154. *b'ìóg* again (adv.);  
 A 229. *kwáng* wide (adj.): 232. *k'wák* to widen (verb);  
 E 139. *giwăt* to say, said (vb. pres., past.): 138. *giwən* to have said (perfect);  
 B 552. *siog* small (adj.): 551. *šōg* small quantity (noun);

- A 129. *kǐəŋ* neck (noun): 130. *kiəŋ* to behead (verb);  
 E 142. *ngǐǎn* to talk (verb): 143. *ngǐan* a saying (noun);  
 H 138. *b'wát* base, foot, root (noun): 137. *b'wat* to uproot (verb);  
 B 355. *sǝŋ* to bear (verb): 356. *sǝŋ* (maternity:) clan (noun), 357. *sǝŋ* innate qualities (noun);  
 F 216. *twən* solid, firm: 217. *ǝwən* (to make solid:) inculcate (verb);  
 G 7. *ǝǐat* hot (adj.): 8. *ǝwat* to burn, to heat (verb);  
 H 83. *pǝt* not (general): 84. *pǝt* not willing, not able (modal sense): 87. *pǝw* is not (with a noun for predicate): 90. *mǝw* don't (imperative): 91. *mǝw* not yet (perfective).  
 K 90. *ǝǐap* to enter (vb. trans. and intrans.): 87, 88. *nəp* to introduce (to cause to enter, causative): 89. *nwəb* the interior (noun).

# THE BOOK OF CHANGES

BY

ARTHUR WALEY

As regards the *Book of Changes*<sup>1)</sup> there is among native scholars in China more agreement than on most subjects. It is agreed that it was in its origins not a philosophical work, but a book of divination. It has been found to contain rhymed proverbs and scraps of song in a style similar to that of the *Book of Odes*; and finally, it is accepted as dating from the end of the Yin dynasty (12th century B. C.) or at the latest, the beginning of Chou. Further progress towards understanding the true nature of the work has been barred by the fact that it has been regarded as a single whole. The thesis put forward in the present paper is that the *Book of Changes* is an arbitrary amalgam of two quite separate works:

1) An omen or 'peasant interpretation' text similar for example to the T'ang MSS. 2661 and 3105 in the Pelliot collection from Tun-huang; or to the MS. in the Kum-janzov Museum quoted by O. Schrader in *Encyclopaedia of Ethics and Religion* IV, 814. 2) a divination text probably of later date and certainly of far more sophisticated nature.

The omen text is entirely in verse and tends towards the formula (typical of peasant lore) exemplified by the English proverb:

A red sky at night  
Is the shepherd's delight.  
A red sky at morning  
Is the shepherd's warning.

Apart from a few stock rhyming phrases the divination text is in prose. It consists of divinatory formulae closely akin to those found on the Yin oracle-bones. The contents of the omen text are of a kind extremely familiar to all students of folk-lore. Parallels<sup>2)</sup> could be cited in almost every case from every quarter of the globe, from every known phase of human society both in the past and the present.

Broadly speaking they may be divided into three classes: 1) Subjective: inex-

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<sup>1)</sup> The *Book* itself, as apart from the seven appendices.

<sup>2)</sup> Particularly from modern China, for example.

plicable sensations and involuntary movements ('feelings', twitchings, stumbling, belching and the like). 2) Those concerning plants, animals and birds. 3) Those concerning natural phenomena (thunder, stars, rain etc.). Examples of all these classes are extremely familiar even in a highly educated and industrialized country like England. We find such beliefs codified in the most elaborate way as early as 2000 B. C. in the Babylonian omen tablets.<sup>1)</sup> Take for example the dog-omens:<sup>2)</sup>

When a dog runs in front of you  
A great battle will follow.  
What a dog halts in front of you,  
You will lose the fight.  
When a dog obstructs your path  
The fall of the city is certain.  
When a dog mounts a bitch in your house,  
Your house will be destroyed.

With this formula compare that of the *Book of Changes*, § 51:<sup>3)</sup>

'When the thunder comes crash, crash,  
There shall be laughter and talk, ho, ho.  
When thunder wakes people a hundred leagues away,  
You shall not lose ladle or spoon.  
When the thunder comes sharply,  
In your counting you shall lose a cowry.'<sup>4)</sup>

But generally speaking, in the *Book of Changes* the second clause or 'apodosis', if I may call it so, is replaced by a divination formula such as 'lucky for meeting a superior', 'unlucky for crossing a big river,' coupled with a number of divinatory terms such as 貞, 悔, 元, 亨 the function of which is far from certain.

Thus we get the formula:

A red sky at morning,  
*Unlucky. Unfavourable for seeing one's superiors.*  
A red sky at night,  
*Auspicious. Favourable for going to war,*

<sup>1)</sup> See Jastrow, *Religion Babylonians u. Assyriens*. Vol. II.

<sup>2)</sup> *Op. cit.*, II, 789.

<sup>3)</sup> The reader of this paper will find it convenient to number the sections of the *Book* 1 to 64, as I have done. I would suggest that European scholars would also find it convenient to number the *Odes* consecutively in the same way, from 1 to 305.

<sup>4)</sup> For the connection between thunder and cowry-shells see Karlgren, *Some Fecundity Symbols*, p. 38.

or the like, the italicized lines representing the inserted portions of the divination text.

Let us take some examples from the *Book of Changes*, beginning with 'feelings', a class of omen still believed in all over the world.<sup>1)</sup>

Book of Changes § 31.

咸其拇...咸其腓---咸其股---  
憧憧往來。朋從爾思。

The circles indicate a rhyme in archaic Chinese.

'A feeling 感<sup>2)</sup> in the big toe, in the calf, in the thigh.'

'If you fidget and can't keep still, it means that a friend is following your thoughts.'

There then come allusions to feelings in the back, the corners of the mouth, the cheeks, the tongue.

Involuntary movements such as stumbling, knocking things over, etc., are extremely familiar as omens. We all know how William the Conqueror stumbled on reaching English soil, and skilfully averted the omen. George Brown (*Melanesians and Polynesians*, p. 154) tells us that in the Pacific stumbling is an omen of misfortune or death, and Grimm (op. cit. same page) mentions the same belief among the Teutons.

§ 39 of the *Changes* concerns 蹇:

往蹇來譽,大蹇朋來

'He who goes stumbling shall come praised.'

'A great stumble means a friend shall come.'

The fundamental meaning of 蹇 is 'foot-impediment'. It will be noticed that here stumbling is a good omen.<sup>3)</sup> But the section begins (and this, in common with other opening clauses, I take to be part of the later, divination text) 利西南,不利東北

<sup>1)</sup> We say in England 'I have a 'feeling in my bones' that such and such a thing will happen.' A feeling of tingling in the ears means that someone is praising one. For such beliefs in Russia see Hastings, *Encyclopaedia of Ethics and Religion* IV, 814 b. For Morocco, see Westermarck, *Ritual and Belief in Morocco* I, 35. For ancient Germany, Grimm and Stallybrass, *Teutonic Mythology*, p. 1117.

<sup>2)</sup> As is well known, archaic Chinese writing makes very little use of significatives ('radicals'). That in the interpretation of the *Book of Changes* these often have to be supplied is a principle already accepted by modern scholars in China. See *Ku Shih Pien* III, 220.

<sup>3)</sup> To stumble going upstairs means in England that one is going to be married.

'Profitable if to the S. W., unprofitable if to the N. E.'

Perhaps the most widespread type of omen is that which concerns the movements of animals, insects, birds and even plants (apparently uncausated movements of tendrils, twigs and the like). If an animal is of an unusual kind, merely to meet with it is an omen. To meet a piebald horse is lucky in England. I take the couplet in § 3:

乘馬班如。泣血遯如。

'If the horse she rides on is brindled,  
Tears and blood will flow profusely  
to refer to an omen taken from the sort of horse that the new bride arrives on at her husband's house. The fact that this section refers to primitive marriage institutions has already been recognized.

It is noteworthy that the element 豕 'hog' occurs in many Chinese characters implying motion, 逐 to drive out, 遂 to follow, 遯 to hide. The movements of swine were closely observed by the Chinese. A herd of swine with white trotters crossing a stream is a portent of heavy rain (*Ode* 232; i. e. Hsiao Ya, last but two).

In section 33 of the *Changes* we read, under the heading 遯 'to take it you must use a thong made of the hide of a yellow bull and no one will be able to loose it.' And then 係遯, 好遯, 嘉遯. It does not need much perspicacity to see that here we must read 豚 'young pig' and not 遯 'to hide'. And when we finally come to 肥遯, the matter is clenched. For what can be the sense of 'a fat hiding'? Whereas 'to tie up the pig', 'a good pig', 'a lucky pig', 'a fat pig' are natural and familiar expressions.

The 'lucky pig' indeed plays an important part in modern New Year observances in Teutonic countries (e. g., Bavaria and Austria), and doubtless elsewhere. The original text beyond doubt concerned pig-omens and pig-ritual; but it has been mutilated beyond possibility of re-construction.

The fox plays so large a part in Far Eastern mythology and belief that it would be surprising if we did not encounter fox-omens. Section 40 says 'If in hunting you catch three foxes . . .,' but the apodosis (interpretation) is lost. Compare § 57: 'If in hunting you catch three different kinds of game.'

田獲三狐：田獲三品

Section 64 says:

小狐汔濟。濡其尾。无攸利。

'If the little fox when almost over the stream  
Wets its tail,

Your undertaking will completely fail.'

Section 34 concerns the behaviour of rams:

羝羊觸藩,不能退不能遂。  
无攸利。

'If a ram butts a hedge,

And cannot go back or go in (i. e. gets stuck),

Your undertaking will completely fail.'

Let us turn to insects. The ant is extraordinarily sensitive to atmospheric conditions and is esteemed as a weather-prophet all over the world. By observing the behaviour of ants the peasants of the Tirol, as I have had occasion to witness, arrive at amazingly accurate prognoses of coming snow-falls, both as to date and extent. The modern Chinese peasant of course has his ant-proverbs.<sup>1)</sup> The usual Chinese word for the ant is 蟻, also written 螳. This word does not occur in the *Changes*. About twenty times, however, we find the character 孚, which is said to mean 'sincere'. In almost every case, the context requires a far more concrete, substantival meaning. Moreover moral meanings, such as upright, just, sincere, etc., come late into a language. Thus the Greek *dike* means originally not justice, but merely 'what is customary.' 'Moral' too has etymologically the same meaning. 'Virtue' means potential power, not virtuous conduct in the moral sense.<sup>2)</sup> 'Sincere' cannot have been the original meaning of 孚. In the Oracle Bones it seems generally to stand for 俘 'prisoner'. A possible semantic history of the word is as follows: (1) the creature which carries its young (i. e. eggs) in its claws 爪; (2) true, reliable (because of the reliable character of the ant's weather prophecies); (3) a guarantee of reliability, a hostage; (4) any captive of war; (5) the moral meaning 'sincere' is a derivative of (2).

This is mere speculation. Here are some examples from the *Changes*:

9. 有孚攣如 14. 厥孚交如  
17. 有孚在道,孚于嘉  
20. 有孚颙如 49. 未占有孚  
64. 有孚于飲酒。濡其首。

<sup>1)</sup> cf. Plopper, *Chinese Religion seen through the Proverbs*, p. 130. For ant-omens, see also George Brown, *op. cit.*, p. 170.

<sup>2)</sup> See below, p. 16.

§ 9. 'If there are *fu* closely following one another.'

§ 14. 'These *fu* are hooked on to one another.'

§ 17. If there is a *fu* on the path. . . . a *fu* on the shelf. (架).

§ 20. If there is a fine *fu*.

§ 49. A *fu* before one has taken the omens.

§ 64. cf. § 5. If there is a *fu* in the wine one is drinking,  
Wet its head.

All the above may well refer to *fu* 'ant'. But § 6

有孚咥。惕中吉。〇<sup>1)</sup>

'If a *fu* laughs, this means good luck in the midst of fear,' is headed 訟 'disputes', and the disputes in question were likely enough to concern the distribution of war-booty. If the reading I have followed is right, it is certain that 孚 here stands for 俘, prisoner of war, as in the Oracle Bones. Section 8 is called 比 to pair'. The *Erh Ya* gives 虺蜥 as the name of a large kind of ant, and in this section of the *Changes* we find the characters 比 and 孚 jostling one another. 有孚比之 'If there are *fu* pair them.' This rhymes with the preceding 不寧方來 'People will come from the unsubjugated lands'. Here again *fu* may will stand for 俘 'prisoner'. The line:

解而拇，朋至斯孚 (rhyme ?)

of § 40 is enigmatic. It may refer to the well-known practice of removing the thumbs of prisoners of war. 而 is probably corrupt. It may stand for 大. The passage certainly requires further investigation.

The subject of § 57 is 巽 'sun', which is taken to mean 'to obey'. It is, however, obvious from the contexts in which it occurs that the word is a noun, not a verb. Thus:

巽在牀下，用史巫紛若

can only mean 'If there is a *sun* under the bed, you must have plentiful recourse to recorders and wizards.' The appearance of a *sun* is evidently an omen. One is reminded of the Ode *The Seventh Month*,<sup>2)</sup> where the creeping of the cricket under the bed is the sign that the time has come to shut up the house for the winter.

<sup>1)</sup> Variant from the *Chou I K'ao I*, Huang Ch'ing Ching Chieh Hsü Pien, 382. Usual reading 窒.

<sup>2)</sup> No. 154.



§ 5 is headed 需, which is taken in the sense of 'to wait patiently'. But here again the context demands a noun, not a verb.

需于郊... 需于沙...  
 需于泥。致寇至。  
 需于血。出自穴。  
 需于酒食。入于穴。  
 有不速之客。三人來。

A *ju* in the outskirts...

A *ju* in the sand...

A *ju* in the mud, brings the foeman along.

A *ju* in blood,<sup>1)</sup> if it comes out of a hole...

A *ju* in wine or food, if it enters a hole, means that three uninvited guests will come. Now 蠕 means a 'crawling thing', and it is certain that we have here to do with some form of insect or worm.

#### Birds.

For the importance of birds as omens such words as 'auspice', 'augur' are in themselves sufficient evidence. They figure frequently in the *Changes*.

§ 7. 田有禽,利執言

'If in the field there are birds,<sup>2)</sup> it is favourable for initiating a parley.'

§ 36 deals with 明夷 'damage to the eye', according to one of the traditional interpretations.

But, as Li Ching-ch'ih has convincingly shown,<sup>3)</sup> there is not the slightest doubt that *ming-i*<sup>4)</sup> is the name of a bird.

明夷于飛,垂其翼。  
 君子于行,三日不食。

'When the *ming-i* in its flight, droops its wings, that means that my lord on his journey for three days will have no food.'

明夷于南狩。得其大首。

<sup>1)</sup> Particularly, no doubt, of the sacrificial victim.

<sup>2)</sup> The word may, however, mean game in general, not birds. The subject of the section is war.

<sup>3)</sup> *Ku Shih Pien* III, 212.

<sup>4)</sup> Ming 明 may be for the cognate 鳴 'singing'.

'When (one sees) a *ming-i* while hunting in the south, (that means) one will capture a big head of game.'

§ 53 is remarkable for the fact that it preserves the original rhymed omen text almost intact, with very little interpolation of the later divination-formulae. It concerns the skimming of wild-geese 鴻漸. Why should 漸 'skimming' be of importance as an omen? Possibly for a reason bound up with the Chinese language. The word 漸 *siām* is phonetically closely akin to 占 *t'siām*, 'to take omens.'

鴻漸于干 ..  
 鴻漸于磐 ○ 飲食衎衎 ○  
 鴻漸于陸 ○ 夫征不復 ○  
 鴻漸于木 ○ 或得其桷 ○  
 鴻漸于陵 ○ 婦三歲不孕 ○  
 終莫之勝 ○

'When the wild-goose skims the bank. . .

When the wild-goose skims the rock-ledge, you may eat and drink in peace.

When the wild-goose skims the land, the absent husband will not return, the pregnant wife will not rear the child.

When the wild-goose skims the tree or gets a flatbranch (?)

When the wild-goose skims the mound, the wife for three years will not be pregnant and in the end will succumb (to her delivery?).'

We may compare the Ode *Chiu yü*. (No. 159):

鴻飛遵渚 ○ 公歸無所 ○  
 鴻飛遵陸 ○ 公歸不復 ○

'When the wild-goose in its plight follows the islands, (It means that) my lord has nowhere to go.

When the wild-goose in its flight follows the land, (It means that) my lord will not return.'

See also the Ode 鴻雁 in the *Hsiao Ya* (No. 181). It is easy to see how the formula of folk-poetry (so often exemplified in the *Odes*) in which a series of statements concerning natural phenomena, trees, birds, etc., are correlated to a series of statements concerning a human situation<sup>1)</sup> grew up out of the omen-formula. The *Odes* themselves, however, are not folk-poetry but a highly sophisticated arrangement of folk-poetry, and it is seldom that the omen-formula appears in so

<sup>1)</sup> e. g. *Ode* 5, The Grasshoppers.

unadulterated a form as in the above text. The correlation between absent lovers and wild-geese has of course remained as a stock theme in Chinese poetry down to the present day.

Li Ching-ch'ih has also dealt in the same place with § 61 and the 'cranes singing in the dark'. But the whole section is very obscure and, I think, corrupt. Particularly intriguing is the 'noise of wings mounting in the sky' of the last clause.

Considering the importance of the willow in folk-lore it is not surprising to find in the *Changes* a willow-omen (§ 28):

枯楊生稊。老夫得其女妻。  
枯楊生華。老婦得其士夫。

'When the rotten willow bears sprouts, the old husband will get a lady-wife; when the rotten willow nears flowers, the old wife will get a lord and husband.'

In the same section there are mutilated references to house-beams and rafters. It is well known that the sagging, warping, cracking, etc., of beams is regarded as ominous in many parts of the world. For its significance in Assyria, see Hastings, *Enc. of Ethics*, IV, 785 a. Finding objects in one's food is lucky or unlucky in various parts of Europe. Compare the practice of secreting small objects in the Christmas pudding. In § 21 we read:

噬乾肺得金矢。噬乾肉得黃金。

'If in biting the gristle of dried meat you come on a metal arrow-head. . .

If in biting the soft flesh of dried meat you come on a bit of gold. . .'

It is hard to resist the conclusion that the section refers to omens from objects found in food. But parts of it seem rather to deal with the feeding behaviour of sacrificial animals. I shall return to these points in a more complete study of the *Changes*, which I hope to undertake later.

§ 54 deals, as has partly been recognized, with wedding-omens. It also refers to a particular wedding,<sup>1)</sup> that of the Yin Emperor Ti Yi (beginning of 12th century B. C.), at which the bridesmaid's sleeves were better than those of the bride — naturally, an ominous state of affairs. It naturally, also, brings bad luck if the bride is late (歸妹愆期). Also, if the basket the bride receives contains no fruits<sup>2)</sup> or the sacrificial sheep, when the bridegroom stabs it, does not bleed.

<sup>1)</sup> See Ku Chieh-kang in *Ku Shih Pien* III, 5 seq.

<sup>2)</sup> Or better 'presents' 貺, the reading quoted in *Tso Chuan*, Hsi Kung 15th year.

§ 4 is headed 蒙. The *Erh Ya* in its section on plants gives the equation 蒙 (*mêng*) = 王女. The commentary says 蒙 = 唐 = 女羅 *nü-lo*, i. e. the dodder (*cuscuta*), an epiphyte which grows on bushes.

Now parasitic and epiphyte plants play a very important rôle in primitive thought, owing to the fact that they seem to be 自感造化之氣而生<sup>1)</sup> 'spontaneously engendered by Nature's breath.' 'All parasitic plants are esteemed in a certain sense holy,' says a writer on Swiss folk lore, quoted by Sir James Frazer.<sup>2)</sup> The dodder figures largely in the beliefs of the Thongas. Junod<sup>3)</sup> mentions the use of the dodder for augury, and a riddle 'The thing of which the stem is invisible, what is it?' Answer, 'The dodder.'

§ 4, then, under the heading 'Dodder' says 見金夫不有躬 'I saw the golden husband; but he had no body.'<sup>4)</sup> For the gold colour of the dodder, see *T'u Shu* XX, 169, under *t'u-ssu* 菟絲, which as we know again from the *Erh Ya* is another synonym for *Nü-lo*.

It seems that we have here the Thongan riddle or paradox. Twice in § 4 the *mêng* is called 童蒙 *t'ung-mêng*. *T'ung* means 'a boy before puberty', 'a bull that has not yet grown its horns.' As applied to *mêng* the term refers to the 'incompleteness' of the epiphyte. It is found again in the name which the *Erh Ya* (section on trees) gives to the mistletoe 宛童 'twisty boy'. It figures in other plant names; for example 童梁, a species of tare.

The epiphyte, then, which has no roots of its own, is mysteriously nurtured by Heaven, and is therefore in touch with the secrets of Heaven. Hence its importance in rites of divination. But it must be approached with caution. If it is to retain its power 'it must be knocked off the tree,'<sup>5)</sup> not cut with a knife. Hence the phrase (near the end of § 4) 擊蒙 'knocking the dodder;' whereas 發蒙 perhaps refers to the alternative method<sup>6)</sup> of pulling the parasite entirely clear of the tree which harbours it. The opening formula

匪我求童蒙,童蒙求我

<sup>1)</sup> *T'u Shu* XX, 180, section on the mistletoe.

<sup>2)</sup> *Golden Bough* VIII, 82.

<sup>3)</sup> *The Life of a S. African Tribe* 2nd. edit. 1927, p. 179, II, 537.

<sup>4)</sup> Legge, 'When she sees a man of wealth, she will not keep her person from him'.

<sup>5)</sup> See Grimm, op. cit., p. 1675, speaking of the mistletoe. For the connection between dodder and mistletoe, cf. Turner's *Herbal* (quoted in Murray's Dictionary: Dodder groweth out of herbes and small bushes as mistletoe groweth out of trees.

<sup>6)</sup> ibidem, p. 1748, 'radicitus'.

'It was not I who sought the stripling dodder; the stripling dodder sought me' is clearly a spell for averting the evil consequences of tampering with the holy plant.

Ritual and divination are closely bound up together. An omen generally points to the necessity for a rite. A rite cannot be performed unless the omens are favourable.

§ 25, perhaps the most interesting passage in the *Book*, deals with the scape-goat ritual, so familiar to us owing to its prevalence among the Semites, and still practised in many parts of the world as a means of ejecting pestilence. Have we any evidence that such a rite was ever known in China? Certainly we have. In the *Yüeh Ling*, last month, we read

命有司大難...出土牛以送寒氣

'The officials are ordered to perform the great demon-expulsion and to put out clay bulls in order to send away the cold-spirit.' I take 出 to mean 'cast out', 'put out of the village', which is its natural meaning. The commentators take it in the sense of 'produce', a meaning quite foreign to this character. Here we have a survival of the use of bulls as scape-goats. For a similar use of clay-figures in Africa, see J. Driberg, *The Lango*, p. 113. Here is the text from the *Book of Changes*

无妄之災。或繫之牛。  
行人之得。邑人之災。  
无妄之疾。勿藥有喜。

The pest *wu-wang*,  
If you tie it to a bull,  
The passers-by will get  
The village people's pest.  
The disease *wu-wang*  
Needs no medicine for its cure.

*The Golden Bough* devotes of course a very long section to rites of the scape-goat kind. How does one tie a disease to a bull? By attaching to it objects (such as herbs or the like) which symbolize the disease. 'They take a goat or a buffalo, tie some grain, cloves and red lead in a yellow-cloth on its back and turn it out of the village,' quotes Sir James Frazer. The suggestion that passers-by will pick

up the disease and so disburden the villagers of it seems to us callous; but it is constantly found in connection with such rites. See for example Hastings, *Encyclopaedia of Ethics and Religion IV*, 738 a.

*Wu-wang* is of course the name of the disease as well as the name of the spirit which cause it. We may guess that this spirit was feminine, which is the rule for disease-demons in China as elsewhere.

My interpretation of this passage will probably strike those not acquainted with existing translations as obvious and inevitable. I would therefore at this point like to quote the traditional interpretation, as embodied in Legge's translation: 'As in the case of an ox that has been tied up. A passer by finds it, while the people in the neighbourhood have the calamity (of being accused and apprehended). Let him not use medicine, and he will have occasion for joy.'

The preceding section is called 'Returning', and it is possible that it deals with the return of the Scape-goat; but the text is fragmentary and obscure.

It is not surprising to find that sacrifice, which figures largely in the Honan oracle-bones, is often referred to in the *Book of Changes*. In antiquity everything connected with the sacrificial animal, not only its behaviour before the performance of the rite, and above all its attitude towards the food provided for it, but also the appearance and condition of the sacrificial meat after the rite was regarded as ominous. I suggest that the sacrificial animal was identified<sup>1)</sup> with the ancestor to whom it was sacrificed, and such terms as 母庚 the mother whose birthday was on the 7th day of the week<sup>2)</sup> indicated not only the spirit of a dead parent but also the animal sacrificed in order to get into communication with that spirit.

§ 18 is headed 蠱, and when we find such expressions as 幹父之蠱 'stem-father's maggots,' 幹母之蠱 'stem-mother's maggots,' phrases which have completely baffled interpreters of the *Changes*, it is surely obvious that the maggots referred to are those which appeared in the flesh of animals sacrificed to the spirits of dead parents, who after their death were, for reasons of taboo, only known by the name of the day upon which they were born, 幹 being merely a fuller way of writing 干 'stem', 'day of the week'.

§ 20 is headed 觀 *kuan*, a root which corresponds closely to the Latin *templ-*, as in the words *con-templ-are*, *templ-um*. It means to watch, in the special sense

<sup>1)</sup> cf. Takata, *Gakko Hatsubon VII*, 19.

<sup>2)</sup> The ancient Chinese had, of course, a ten day week, the signs denoting the days being called the 10 stems 十干.

of watching for natural signs. Hence *kuan* means an observatory, a place where the portents of heaven are watched. Later, it becomes the general name for Taoist 'temples'.

Here *kuan* figures in the sense 'to observe heaven,' but also 'to observe the sacrificial animal,' which is indeed the link between man and heaven. 觀國之光 clearly means 'to observe national lights,' i. e. comets, shooting-stars and the like which were regarded as portents affecting the destiny of the nation. References to such portents are innumerable in Chinese as in Classical literature. Compare, for example, the mysterious 'light' seen when the Han Emperor Kuang Wu was born.<sup>1)</sup>

Then we have 觀我生<sup>2)</sup> 進退 'observing whether my sacrificial animals advance or retreat.'

Two other kinds of *kuan* are mentioned. 關觀 'peeping inspection' and 童觀 'stripling inspection'. Concerning the first I have no suggestion to offer. But it seems difficult to disassociate the latter with such expressions a 童謠 'strip-lings' songs,' i. e., inspired utterances of young boys whose 'mouths seemed to speak of themselves.'<sup>3)</sup> The importance that the Chinese attached to such utterances and to the 'untaught knowledge'<sup>4)</sup> that these young people displayed must have struck every reader of Chinese history. Now among many primitive people the initiation of boys into the tribe is accompanied by beatings, whippings and other tortures which (sometimes with drugs as an accessory) produce a state of stupor. The utterances of initiates when in this state are regarded as inspired. Such rites are based on psychological factors permanent in mankind and constantly tend to recrudescence. Compare, for example, the tortures inflicted on new apprentices by the trade-guilds of the Hanseatic towns.

The word for 'youth', 'stripling', 'young man approaching puberty' in many languages perpetuates the memory of this custom. Among the Kona in the Sudan initiation candidates are called 'children of the whippers' i. e. those that are whipped. I suspect that the English word stripling has the same origin. I suggest also that *xóros* youth is derived from *κείρειν* 'to cut', just as, for example, *τόνος* from *τέλειν*. The Jews, moreover, called confirmation candidates Bar Onshin 'children of punishment'.<sup>5)</sup> When therefore we find that the character 童 has in

<sup>1)</sup> *Lun Hêng* III, 12.

<sup>2)</sup> For 牲, etymologically the same word. See Karlgren, *Analytic Dict.* No. 874.

<sup>3)</sup> *Lun Hêng* XXII, 16.

<sup>4)</sup> *Lun Hêng* XXVI, 8.

<sup>5)</sup> *Jewish Encyclopaedia* II, 509, under *Bar-mizwah*.

the Seal form not 立 but 辛, composed of 𠂔 which is defined as 攷 'to stab, to beat', and 亠 (=) which fulfils in the earliest Chinese writing the functions<sup>1)</sup> of the later significative 示 'connected with religion', it seems that 童 originally means 'those who are beaten as a religious ceremony.' Thus the word contains a memory of times when the Chinese, like other primitive peoples, conducted violent initiation ceremonies. 撞, it will be observed, still means 'to strike', and 鐘 ('bell') is 'metal which is struck'.

I would suggest then that 童觀 means 'observation (of omens) by boys who have not reached the age of puberty', and perhaps originally 'observation by initiation-candidates' during their period of trial and seclusion.

Section 27 continues the theme of 'observing'.

舍爾靈龜。觀我柔頤。

This gnomic rhyme is only intelligible if we put it into the mouth of the sacrificial victim: 'Discard your holy tortoises and observe my pendulous jaw' i. e. my dewlap.

§ 52 is headed 艮 i. e. 齧 'gnawing', and evidently deals with omen-taking according to the way in which rats, mice or the like have deals with the body of the sacrificial victim when exposed as a 'bait' to the ancestral spirit.

艮其背不獲其身。  
行其庭不見其人。

'If they have gnawed its back, but not possessed themselves of the body, It means that you will go to a man's house, but not find him at home.'

艮其腓。不拯其隨(=臍)。  
其心不悅。

'If they gnaw the calf of the leg, but don't pull out the marrow, their (i. e. the ancestors') hearts do not rejoice.'

君子思。不出其位。

If, while the lord is observing them, they do not move from their appointed place... 思 'to think' is composed of 'heart' and 𠂔 'head' (numeral of ani-

<sup>1)</sup> E. g., 人 'man'; 天 'heaven'. The lower part of the character, abbreviated from 重 *d'wong* is of course onomatopaeic, reproducing the heavy thud of beating.



mals). Perhaps it means originally 'to observe sacrificial animals'. Compare the element 田 in 獸, and the cognate word 伺 'to observe'; also 思次 'observation-post'.

Tsêng Tzū, in *Analects* XIV, 28, is made to quote this same proverbial saying, giving to it<sup>1)</sup> a moral, not a ritual meaning: i. e. 'The morally superior man in his thoughts does not depart from his sphere.'

§ 29 is called 習坎. The traditional interpretation tells us, (rightly, I think) that 習 is for 摺. This last character is etymologically the same as 擡 and means 'to pile one thing on another', 'to fold', 'to duplicate'. Applied to 坎 'pit' this can only mean 'double' and imply one hole opening out of another. In the *Li Ki* (XXIV) we read 祭月於坎 'we sacrifice to the moon in the pit'. Offerings to the moon are still placed by Balkan peasants in holes in the ground.<sup>2)</sup> If there were any doubt that § 29 deals with a magic rite it would be dispelled by the concluding rhyme-triplet:

係用微絰。寘于叢棘。  
三歲不得。

'Bind with a thread of three strands and of two strands,  
Put it in a bramble thicket  
And for three years you shall not get.'<sup>3)</sup>

The use of thread made of several distinctive strands in connection with magic (for example, to tie lockets, amulets and charms) is well known. Compare the Sumerian incantation: 'White wool, black wool, a double thread the spindle was spinning; a wondrous thread, a mighty thread, a variegated thread,<sup>4)</sup> a thread that does away with the curse.'<sup>5)</sup>

Fragmentary though the text is, some idea of the nature of the ritual in question may be gathered from the lines that precede:

入于坎窞,勿用  
樽酒簋贰,用缶。納約自牖。  
坎不盈。底(~祗,禔)既平。

<sup>1)</sup> As frequently happens in Confucian texts. cf. *infra*.

<sup>2)</sup> From Miss P. Kemp's forthcoming work on healing-ritual in the Balkans.

<sup>3)</sup> i. e., get the pest or disaster against which the rite is directed.

<sup>4)</sup> Like that of the Japanese *tamadasuki*.

<sup>5)</sup> Gadd, *Sumerian Reading Book*, p. 151.

'Enter into the arcana of the pit. *No use.*

Goblet wine bowl, fill from earthenware crock.

Let in by a rope from the window

Before the pit is filled,

The bottom already levelled.'

The expression 坎 穴 'arcana of the pit' explains why it is called 'double'.

§ 32 is particularly interesting in that it explains a passage in the *Analects* of Confucius that has hitherto remained completely obscure:

不恆其德或承之羞

'If you do not stabilize your »virtue»,

Disgrace will overtake you.'

The moral words, such as virtue, justice, etc., have, as I have pointed out, a slightly different colouring in the earlier stages of human society. 德 in early Chinese<sup>1)</sup> means not virtue in the sense of moral rectitude, but rather, so to speak, the stock of credit that a man has at the bank of fortune. Such a stock is built up by the correct carrying out of ritual, and above all by the securing of favourable omens. If for example I consult the tortoise and get a favourable response, that is my *té*. It is my potential good luck. But it remains like an uncashed cheque unless I take the right steps to convert it into a *fu* 福, a material blessing. Like an uncashed cheque, a *té* is a dangerous thing to leave about. It may fall into other hands, be put to someone else's account. Moreover, an omen is regarded as in itself a momentary, evanescent thing. Like silver-prints, it requires 'fixing'. Otherwise it will refer only to the moment at which it was secured. Omen-takers all over the world are careful both to 'fix' and to secure for themselves their *té*, their *virtus*.<sup>2)</sup> Omen-objects, which have given a favourable result, are nailed to trees, buried, locked up.<sup>3)</sup> I think it is some 'stabilizing' rite of this kind that the term *hêng* 恆 implies. Let us now turn to *Analects* XIII, 22:

»The people of the south have a saying, 'It takes *hêng* to make even a sooth-sayer or medicine-man.' It's quite true. 'If you do not stabilize your virtue, disgrace will overtake you.'»

<sup>1)</sup> Abundant examples will be found in the *Tso Chuan* and *Kuo Yü*. Cognate with *té* (*tək*) is 直 to plant (*d''ʔək*). In the oldest script they share a common character 𠂔; see Takata, Kochühen, under 德. The analogy between the omen that will fulfil itself in good luck and the seed that will bring plenty is obvious enough.

<sup>2)</sup> The Latin word also has this same sense of 'potential power'.

<sup>3)</sup> e. g. in the Balkans, Miss Kemp, op. cit. I would suggest that the Honan oracle-records were not, as has often been assumed, merely thrown away, but were deliberately buried for ritual reasons.

Confucius adds 不占而已矣, which has completely baffled his interpreters.<sup>1)</sup> Surely the meaning is 'It is not enough merely to get an omen,' one must also *hêng* 'stabilize it'. And if such a rule applies even to inferior arts like those of the diviner and medicine-man, Confucius asks, how much the more does it apply to the seeker after *tê* in the moral sense? Surely he too must 'make constant' his initial striving!

What sort of rite does the term *hêng* imply, and what is the history of the character 恆? In the old script it consists of the moon 月 between two lines.<sup>2)</sup> The primary meaning is the crescent moon, as in *Ode* 166 月之恆. But the usual meaning is 'continuing from one point to another' and so 'stable, fixed, perpetual'. I suggest, then, that *hêng* was originally a rite performed at the first appearance of the new moon and directed towards making a favourable condition of affairs last 'all through' the lunar month. A good omen was required for a single act, such as making a sacrifice. But for permanent undertakings it was indispensable that the omen should be 恆吉,<sup>3)</sup> not only auspicious, but favourable 'all through' the period for which it was required. We have some evidence that the typical stabilizing rite consisted in drawing concentric circles or a spiral round the omen-objects. In common practice the element *hêng* is often written 亘, in old script a spiral or two concentric circles between two lines. Throughout the ancient world new foundations whether of camps, cities or villages, were 'stabilized' by drawing spirals or circles round them. As in ancient Germany so to-day in the Balkans a circular furrow is ploughed round new settlements. The Romans galloped the maze-dance, Troica, round the walls of new cities. On the Oracle Bones we constantly find 卜 亘 'The tortoise was consulted with regard to the rite 亘.' (e. g. *T'ieh-yün Ts'ang Kuei* I, fol. 6 b.) It should be mentioned that some modern interpreters of the Bones take the second character in such combinations as the name of the diviner. This theory involves great difficulties.

§ 35 is headed 晉. I suggest that this stands for 楮 'to insert'.

康侯用錫馬蕃庶。  
晝日三接  
受茲介福。于其王母。

<sup>1)</sup> Soothill, in what is perhaps now the standard translation, says, 'This is an acknowledged crux interpretum' and translates 'All because he did not calculate beforehand.'

<sup>2)</sup> For these two lines, meaning 'connected with religion', see above, p. 19.

<sup>3)</sup> cf. *Book of History*, the *Lo Kao*, 'Ordinance concerning the foundation of the Capital at Lo.'

It has already been recognized by Ku Chieh-kang<sup>1)</sup> that K'ang hou is a proper name and refers to the brother<sup>2)</sup> of the first Chou emperor; Ku, however, regards the second line as unintelligible. I would translate:

'The lord of K'ang caused his gift-horses to multiply exceedingly. He coupled (the stallion with the mares) three times in a morning. He received this «delimited» 介 blessing from his royal mother.'

The commentators tell us that 介 simply means great. This is what they invariably say when a word belongs to the old ritual vocabulary, the clue to which had been lost. I suggest that 介 denotes the magic which renders spaces intact by 'bordering' them with protective signs. Such is the purpose of border-patterns (spirals, key-patterns) on early works of art. A *chieh fu* 介福 is a blessing which has been either directly or symbolically 'bordered' in this way.

A pestilence may also be 'bordered', so that it does not spread. cf. § 58 介疾有喜 'If you *chieh* the disease, all will be well.' The meaning of 楮 'inserting' will be apparent to anyone who has ever lived on a farm.

§ 38 is headed 睽. 睽 means 'arrows' 矢 'facing in opposite directions' 𠄎, and is the name of the last day in the ancient Chinese 10-day week. On the Oracle Bones it is written 𠄎 and on ancient bronzes often 𠄎, with minor variations. I take this to be a picture of the face of a sun-dial, with the arrows (or rather, their shafts) pointing towards the four points of the compass. Favourable to this theory is the fact that the ordinary character for sun-dial 晷 was pronounced in a way phonologically identical with 睽 (i. e. *kj<sup>w</sup>i*); moreover 葵 means the sun-flower, it is 向日花 'the flower that turns to face the sun' and is therefore in itself a sort of sun-dial or time-keeper. Finally, 揆 means 'to calculate,' 'to measure,' as the sun-dial measures the hours. On the 'sun-dial day', the last day of the decade, omens were taken with regard to the next ten days. The Oracle Bones contain numerous references to this practice. § 35, then, is concerned with omens occurring on this day or seeming to have reference to this day. Why a sun-dial was the symbol of the last day we know no more than why a nail was the symbol of the fourth, or a lance that of the fifth.

The text begins by telling us that a horse lost on this day must not be pursued; it will come back of itself. There is no danger in seeing an 惡人. Now in the Oracle Bones 亞 appears as a place-name, and I take these two characters to mean 'a man of Ya,' and not 'an evil person'. It is in fact a case of omen by

<sup>1)</sup> *Ku Shih Pien*, p. 17.

<sup>2)</sup> Prince of Wei, lord of K'ang. See Chavannes, *Mémoires Historiques*, I, 246.

'*Angang*', chance meeting.<sup>1)</sup> The same theme is continued in the next clause: 'Meeting your master in the lane.' Then follows:

見輿史。其牛掣。其人天且劓。

'To see a wagon being pulled; the ox, one horn up and one horn down;<sup>2)</sup> the man clean-shaven (?) and with his nose cut off.'

So elaborate an omen cannot be typical. It must refer to a particular occasion when someone had this experience. The subsequent omen is 'If you see a pig with mud on its back in the same cart with a Kuei 鬼, first stretch your bow; then loose it.' *Kuei* in current Chinese means 1) a ghost, 2) a foreigner. The second meaning ('foreign devil') is a comparatively modern expression. But it has revived what was, in fact, the earliest meaning of the character. For the 鬼 were the great north-western enemies of the Yin. The Yin Emperor Kao Tsung's three years campaign against them is twice referred to in the *Changes* (§§ 63, 64). I suggest therefore that in the present section 鬼 means not 'ghosts' (Legge, 'He fancies there is a carriage full of ghosts'), but 'a man of Kuei'. Though this Kuei and the word for sun-dial are not quite identical phonologically, I suspect that the significance of seeing a Kuei (Kj<sup>w</sup>ei) is partly determined by the resemblance of this word to *kuei*, the last day of the week. The omen was evidently a bad one, the stretching and then loosening of the bow being a ritual for the expulsion of evil influences; cf. the twanging of bow-strings by night watchmen, several times mentioned in the *Tale of Genji*. 睽 means 'the eyes looking in opposite directions' (like the arrows on the sun-dial). The phrase 睽 孤 occurs twice in a disjointed manner in the text, and is said to mean 'independent'. There is a possibility that the second character should be 狐: 'cross-eyed fox'.

One characteristic of the text, to which I have not as yet alluded, deserves a passing reference. Chinese abounds in reduplicative expressions (similar to the English Ding-dong, to represent the sound of a bell) used in an onomatopoeic or quasi-onomatopoeic way. These words, representing shades of feeling as well as nuances of sound, appearance, etc., could not of course be rendered pictorially, and are often expressed by phonological equivalents that, taken separately, have

<sup>1)</sup> It is still commonly believed by peasants in the remoter parts of Europe that to meet a priest is unlucky, to meet a prostitute, lucky. It is possible that § 13 同人 refers to 'chance meetings' or coincidings.

<sup>2)</sup> So the *Shuo Wen*, which is however a source that must be used with great caution.

a quite different meaning. Thus under the heading 坎 we get the expression 坎坎, a reduplicate which is generally admitted to have a quite different meaning from 坎 by itself. Such phrases, which seem to be quoted from songs similar to the *Odes*, are considered relevant by the omen-taker because of their similarity in sound and therefore in graphic expression to the word which heads the section. The arrangement of the *Changes* is therefore, as regards such phrases, in a sense a lexicographical one. For this reason certain European scholars have reached the erroneous conclusion that the whole book is nothing more than a dictionary.<sup>1)</sup>

The question remains to be answered, how and when did the *Book of Changes* come into existence? It has been shown to contain references which go down to the closing years of the Yin and possibly the opening years of the Chou dynasty. The beliefs which it embodies are however as dateless in China as in Europe. We cannot say when, either in China or the West it was first thought unlucky to stumble; nor can we say when men first used scape-goats to expel pestilence. Nor can we say exactly when the original 'omen-text' was first cut up and mutilated by the insertion of interpretations drawn from another sphere of divination. But the work has always been known as the *Chou I* 'Changes of the Chou dynasty', and we shall be quite safe in saying that it reached something like its present form during the first half of the Chou period, say between 1000 and 600 B. C.

The *Changes*, as we have them, show an amalgamation of four different divining techniques. 1) What is called by anthropologists 'peasant interpretation', the use of natural phenomena, chances, feelings, etc., as omens. 2) Divination by plant-stalks, through a 'score' of odds and evens arrived at by the shuffling and counting<sup>2)</sup> of such stalks. The 64 hexagrams merely represent the scores of odd and even arrived at as a result of this process. The number six (six sides of a square) suggest that this technique in its turn was derived from dice-throwing. 3) Divination by marks on the heated carapace of the tortoise. The vocabulary of the interpolated clauses is largely based on that of tortoise divination, as we know it from the Oracle Records of Ho-nan. 4) Divining-tablets, representing objects of omen. The character 卦, 'hexagram' means 'tablets for divining'. Di-

<sup>1)</sup> This theory was revived by Conrady, whose paper on the subject was published posthumously by Dr. Erkes in *Asia Major*, Vol. VII.

<sup>2)</sup> The process is lucidly described by Richard Wilhelm in his *I Ging*. The method of applying the results so obtained to the text of the *Changes* has varied greatly at different periods.

viner-tablets of various materials continued to be used throughout the historic period in China.

The interpretation of the *Changes* (which even in the 3rd century B. C.<sup>1)</sup> could still be classified as a book of divination) as an ethical and cosmological treatise is embodied in the ten (or strictly speaking seven) appendices usually printed with it. Here we see at work on a large scale and as applied to a whole book the process that transformed individual words such as 義 and 德 from a purely ritual, auguristic into a moral meaning. As regards the *Changes*, the process may have begun as early as the fourth century,<sup>2)</sup> and a species of cosmological interpretation may have begun even earlier. But this process was certainly not complete until well into the Han dynasty.

Two further questions present themselves:

1) Why was it called *Changes*?

2) On what principle were the 64 sections allotted to the 64 'scores' (hexagrams)?

1) I do not find it easy to accept the current explanation that the 'change' referred to is the 'passing' from one hexagram to another. This passing is in early literature always called 之 'going to'. I do not think that the question has been satisfactorily solved.

2) If we accept that 乾 'means' Heaven, that 坤 'means' Earth, etc., the second question answers itself; for obviously 6 unbroken lines are a fitting symbol for the paramount superiority of the one, just as 6 broken lines aptly symbolize the inferiority of the other. But I suggest that 乾 has only come to mean Heaven because of its association with § 1 of the *Changes*. The fundamental meaning, judging by early forms, seems to be 'dry', as the sun dries the grass in the morning. Such is the meaning of the character in the *Book of Odes*. The case of 坤 is the same; but the history of this character is so complicated that I must reserve it for a subsequent paper.

Several different principles could naturally be adopted in the arrangement of a series of patterns composed of two sorts of line. The text was probably cut up and shuffled a good many times before it reached its present order.

I have dealt in the foregoing pages with such parts of the omen-text as are most completely and intelligibly preserved. I have formed provisional theories with

<sup>1)</sup> At the time of the Burning of the Books.

<sup>2)</sup> As is well known, the passage in which Confucius is made to appear as a student of the *Changes* (*Analects*, VII, 16) has probably been tampered with. In the Lu version of the *Analects* the word does not appear in the sentence at all. There is no evidence that the Confucians took the book under their wing till much later.

regard to many other passages where the context is so slender that certainty is impossible. To substantiate such hypotheses some sort of outside evidence will be necessary. It has naturally occurred to me to seek it in the Honan Oracle Bones. But here one is at once brought up against a serious difficulty. Hundreds of characters which occur on the bones still remain to be identified. Familiar rites and activities such as hunting, war, sacrifice, etc., have of course been recognised; but anyone who believes, as I do, that the early Chinese had much more in common with other primitive peoples than has been suspected, must be convinced that the content of the oracle records is in reality far richer and more varied than has hitherto appeared.



# SELECTED ORDOS BRONZES

BY

*J. G. ANDERSSON*

It is only during the last twenty years that we have gradually gained a knowledge of the existence on the Sino-Mongolian borderland of small bronzes occurring in great numbers and closely recalling the type of Siberian bronzes found frequently in the Minoussinsk area. Over a greater distance there is also a close relationship between these bronzes from Southern Mongolia and the rich art of ancient Scythia.

Professor Ellis H. Minns proposed the term *Ordos bronzes* for these relics found in Inner Mongolia, especially abundantly in the desert country named Ordos and enclosed in the northward bend of the Yellow River.

Numerous exquisite pieces of this ancient art have been described by prominent scholars such as Minns, Borovka, Rostovtzeff, Sirén, Pelliot, and many others.

Basing my research upon the rich material of Ordos bronzes which had been collected in the course of recent years in the Museum of Far Eastern Antiquities, I published in 1932 a paper ›Hunting Magic in the Animal Style‹, giving an inventory of the principal types of Ordos bronzes.

When in the following year preparations were made for receiving in Stockholm the 13th International Congress of Art History, we arranged in the Museum of Far Eastern Antiquities an exhibition of Ordos bronzes. The bulk of them, especially the plain and common specimens, were derived from our own collections. But well knowing that numerous rare and magnificent pieces were to be found in the possession of museums, private collectors and art dealers, we addressed ourselves to many friends abroad and met with a very willing response.

Foremost among our contributors was Mr. C. T. Loo, of Paris, who came here personally bringing with him 56 of the most exquisite specimens in his magnificent collection of Ordos bronzes.

M. David Weill, of Paris, sent us seven very important specimens, and upon our special application the Musée Guimet contributed with two Ordos plaques of crucial importance to the whole problem of Ordos bronze chronology.

A distant contributor was Mr. F. A. Nixon, Postal Commissioner, Tsinan, Shantung, China, who sent us 39 specimens, which added very materially to the value of the exhibition.

Two other connoisseurs who during recent years have built up a very important collection of Ordos bronzes, Captain and Mrs. W. Mayer, formerly of Peking, now

residing in Fort Hoyle, Maryland, graciously sent us 21 specimens, several of them remarkable for their rare quality.

In a way the most noteworthy contribution to the whole exhibition was given by Messrs. Ton Ying & Co., New York, and consisted of 8 pieces of unusual size and such rare beauty that they may well be called the very cream of the whole exhibition.

From the Metropolitan Museum, New York, four very important plaques were added to the exhibition.

Mr. George Eumorfopoulos, London, kindly lent us six very important pieces out of his famous collection, and Mrs. Margot Holmes, London, contributed with two specimens.

Among our own collectors Mr. A. Hellström, of Mölndal, stands foremost with six specimens, one of them a very beautiful pole-top.

H. R. H. the Crown Prince lent to our exhibition a small bronze deer of delicate beauty.

From the National Museum we obtained a very interesting plaque, and from Professor Sirén a buckle of Ordos type.

To all these individual collectors and Museums we herewith express our deep-felt gratitude for their ready and generous support, which alone rendered it possible for our exhibition to constitute an important contribution towards the knowledge of the Ordos bronzes.

In order to afford visual proof of the close relationship between the Ordos bronzes and corresponding antiquities from the Minoussinsk area we were desirous to exhibit side by side with the objects from Southern Mongolia a representative set of Minoussinsk bronzes. At an early stage of our preparations we entertained the hope of receiving such a collection from Russian Museums, but, when this effort finally failed, Professor A. M. Tallgren of the National Museum, Helsingfors, came to our rescue with notable courtesy and readiness, bringing with him 380 Minoussinskbronzes, which, exposed side by side with the Ordos specimens, highly intensified the interest displayed in the exhibition.

Many of the specimens belonging to this museum and shown in the exhibition had already been published in my paper ›Hunting Magic in the Animal Style‹, Bulletin of the Museum of Far Eastern Antiquities, vol. IV, 1932.

With reference to another and very important group of exhibits, namely the numerous specimens lent to the exhibition by Mr. C. T. Loo, of Paris, we were aware that Dr. Alfred Salmony was preparing a monograph on Mr. Loo's large and unique collection of Ordos bronzes. This splendid volume ›Sino-Siberian Art in the collection of C. T. Loo‹ reached us at the beginning of this year.

We have also recently been informed that M. David Weill has entrusted our

former collaborator Dr. Olov Janse with the editing of a catalogue on M. Weill's admirable collection.

Consequently we have refrained from reproducing here the valuable specimens with which Messrs. Loo and Weill kindly enriched our exhibition.

As a result of these exclusions we had to draw principally from the collections of Mrs. and Captain Mayer, Mr. Nixon and Ton Ying & Co. Owing to the necessity of restricting the number of plates we have been able to reproduce only a limited number of the numerous small bronzes belonging to the Mayer and Nixon collections. On the other hand we have considered it necessary to illustrate and describe all the different types of the splendid Ton Ying set, which is quite unique and probably came all from one tomb.

Dr. Salmony's volume ›Sino-Siberian Art in the collection of C. T. Loo‹ in one respect caused some surprise as he dated the Ordos bronzes in many cases centuries later than what we have been accustomed to consider as probable.

Dr. Salmony is certainly quite justified in his statement that there are numerous degenerate specimens apparently derived from the true animal style but dating far down in the first millenium A.D. There is every probability that we shall one day be able to establish for the Ordos area a chronology distinguishing between 1) the archaic beginnings of the Animal Style, 2) the Animal Style at the height of its development and 3) degenerate affiliations of the Animal Style.

I have altogether refrained from discussing this problem here, as it is my intention to devote an entire bulletin to the problem of the chronology of the Ordos bronzes. There are other aspects of this question that have so far passed practically unnoticed. In the first millenium and at the beginning of the 2nd millenium A. D. other styles of art, entirely independent of the Animal Style, were widely spread in Mongolia. A very large body of material of what we have called in our daily routine ›late Mongolian bronzes‹ is stored in this Museum. A survey of this material will be given in the volume to be devoted to the Ordos bronze chronology.

### *Knives and daggers.*

Pl. I, fig. 1 (K. 11290: 18). Karlbeck 31/32. Said to have come from Kueihau-cheng (Suiyuan).

Short knife, probably originally slightly longer, as the blunt point is certainly a secondary feature. Short handle, the greater portion of which is occupied by the strongly stylized head of a carnivore.

The whole surface is covered with the greenish-black patina that is found on many Animal Style bronzes. Length of knife 119 mm..

Pl. I, 2. Mayer Collection.

Knife crowned by a bird, the body of which is executed in open-work. Surface smooth, greenish-black. Total length 204 mm.



Fig. 1

Pl. I, 3. Metropolitan Museum. 24.216.1.

Knife decorated on the left side with four horned animals executed in raised lines. At the very top of the knife is attached a human mask with perforated eyes and mouth. The method of attachment of this mask to the knife-handle is shown by text-figure 1.

The right side of the handle is decorated with a geometrical pattern consisting mainly of triangles. Surface smooth, green to black. Total length of knife 219 mm.

Pl. I, 4. Mayer collection.

Dagger. Blade with two lateral smooth parts and a slightly sunken central part with a frieze of birds.

Hilt consisting of two perforated projections, between which is a lozenge-shaped design built up of oblique lines.

In the centre of the lozenge is a small pattern, different on each side (textfigure 2 a and b).

The handle is rectangular in cross-section with the narrow sides smooth and projecting somewhat above the sunken broad sides, which are decorated on one side with four birds (the foremost different from the three following ones). On the other side there are three tigers and in front of the foremost one some lines, which may indicate a deer or some similar game.

The pommel has two different sides. On the side on which the handle is decorated with birds, the pommel is protruding with a hollow interior (textfig. 2 c). On the side on which the handle is decorated with tigers there is an indistinct animal figure (a bear?). Total length of dagger 267 mm.

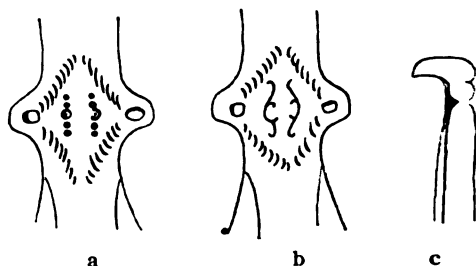


Fig. 2

### *Tubular objects.*

Pl. I, 5. Mayer Collection.

Tube decorated on the outside with four friezes of deer: a stag followed by half of a hind. Total length of tube 141 mm.

Pl. II, 1 (K. 12005: 42). Larsson coll. Probably from the Ordos desert.

Tube of very soft yellow metal. The tube itself is decorated with oblique raised lines. It carries two groups of three pendants, each attached to the tube by rather

strong loops. These pendants give a vague zoomorphic impression suggesting a lizard's head or something similar. The object is covered with a rich variegated patina in green and reddish-brown. In the ›nostrils› of the pendants there are abundant remains of the desert sand in which the object was once buried. Length of pendant 28 mm.

*Spoons and pendants.*

Pl. II, 2 (K. 11278: 14). Karlbeck 31/32. Bought in Yülinfu.

Large spoon. At the top of the handle there is a heavy ring, further down there are two pendants, one below the other and attached to the handle by strong loops. It is interesting to note that the lower of these two heavy pendants has worn deeply into the thickened base of the hollow part of the spoon. All this heavily worn part is covered, like the rest of the spoon, with the greenish black patina that is so characteristic of these objects. Consequently there is no doubt that all this wear is old. It seems very likely that the spoon was strung to the belt by means of the strong top ring and that, when the owner was galloping about upon his frisky steed the spoon made a noise like a rattle, as it still does when vigorously shaken.

The hollow part of the spoon is elongated and comparatively large, comprising fully one half of the entire length of the spoon. Length of handle including top ring 86 mm. Length of hollow part 87 mm.

The surface of the whole object is covered with greenish black. The black predominates but there are spots of beautiful green (especially upon the pendants) and also, to a lesser extent, small spots of brownish red.

Pl. II, 3 (K. 11224: 3). Larson coll. Probably from the Ordos desert.

Spoon with straight handle carrying a strong central nerve, along the sides of which there is a wavy décor.

The hollow part is broad and deep.

The patina of this piece is unusually beautiful. It is one of the finest examples of the greenish-black, varnish-like patina that is characteristic of many Ordos bronzes. Spots of beautiful green and brownish-red add to the life and lustre of the surface. Length of handle 80 mm. Length of hollow part 61 mm. Width 48 mm.

Pl. III, 1 (K. 11224: 27). Larson coll. Probably from Ordos.

Small pendant with a strong loop (in the part that is shown below on the figure) for attachment.

The main object is a quadruped reminiscent of a wild ass or possibly a hind. Behind this animal there is the head of a smaller specimen of the same kind.

These two animals are connected with the loop by means of a **structure**, the meaning of which I cannot interpret but which most closely resembles a string of beads.

Pl. III, 3 (K. 10330). Bought in Peking.

Small pendant very much like III, 1. The main animal has the **ears raised** and is of the type which we have earlier named wild ass (compare **Hunting Magic** Pl. XXIX, 5). Behind and below it is the forepart of a second animal with ears lowered.

The loop projects from the back of this animal.

Pl. III, 4. Mayer collection.

Small pendant-spoon with two large-beaked birds' heads forming the central part. Length 67 mm.

Pl. III, 5. Mayer collection.

Small spoon, perforated. At the base of the spoon-blade is a transverse hollow bar upon which stand 3 birds. Length of entire piece 48 mm.

Pl. III, 6. Nixon collection.

Small spoon with circular blade. The handle is in the shape of an animal with big ears and heavy muzzle, in which is the hole for suspension.

Pl. III, 7 (K. 12005: 134). Larson coll. Probably from the Ordos desert.

Small pendant spoon. The handle is in the shape of an ox's head, the horns of which form the attachment to the hollow part of the spoon. In the very much elongated muzzle of the ox there is a hole for suspension. Length of entire object 48 mm. The whole surface covered with the usual greenish-black patina, which in this case is rather dull.

Pl. III, 9 (K. 12005: 125). Larson coll. Probably from the Ordos desert.

Pendant of a peculiar kind. The main feature is a wolf's head, the ears of which form the bar for suspension. Owing apparently to constant use this bar is nearly worn out. It has probably to a large extent become worn in recent times, as the soft copper-like metal is almost everywhere exposed. Only in the hollows are there remains of the old greenish-black patina. Length of entire piece 45 mm.

»*Animaux enroulés.*»

Pl. III, 2 (K. 11281: 42). Joel Eriksson coll. Region of Hattin Sum. Inner Mongolia.

A specimen of that peculiar group which has been named ›l'animal enroulé›. The main feature is a deer, the body of which is strongly bent, and the limbs of which are turned into projections carrying at their ends an extension with a hole. There are also holes or deep hollows in the muzzle and eye of the animal. In all there are seven such holes or deep hollows, which may once have carried some precious stone. On the obverse side of the bronze is a rectangular loop for attachment.

Pl. III, 8 (K. 11071: 27). Karlbeck 28/29. Bought in Peking.

A curled-up tiger with death's-head like a skull seen en face. The short limbs end in a star-like foot with a big central fosse very similar to the eyes. Probably all these four fosses carried stones. On the obverse side is a loop for attachment. Surface smooth, greenish-black.

Pl. V, 2 (K. 11090: 111). Karlbeck 28/29: 668. Bought in Peking.

A circular piece showing two animals lying head to tail. The outer circumference encircling these animals consists of a row of dots. On the obverse side an unusually heavy loop.

Pl. V, 3 (K. 11282: 22). Karlbeck 30/31. Bought between Shenmu and Tokoto.

Circular piece with an outer ring and in the centre a curled-up body with two heads, somewhat resembling Pl. XXVII, 3 in ›Hunting Magic›, but with the heads closer together so that one eye and one ear are common to both. Between the outer ring and the curled-up double animal is an openwork space of small bird heads. The three ears form part of this space and are only slightly larger than the rest of the rings and a little elongated.

On the back a heavy bar with signs of much wear.

#### *Buckles.*

Pl. IV, 1 (K. 11090: 27). Karlbeck 28/29. Bought in Yülinfu.

Ring-shaped buckle with the usual simplified bird's head in front and behind a fox's?-head. Between the tips of the ears is a slender bar. The whole object encrusted with bright green verdigris.

Pl. IV, 4. Nixon collection.

Ring-shaped buckle. At the front the ring is slightly pointed. Instead of hook there is a groove, possibly because the hook is broken away.

The rear part forms a rectangular loop showing considerable wear inside. The attachment between the ring and the rectangular loop is covered by a batlike head. Heavy green and red incrustations.

*Rattles.*

An outstanding feature in the equipment of the ancient Ordos people was their rattles. We have already shown above (Pl. II, 1, 2) how the pendants of tubes and spoons most probably served the same purpose as true rattles.

Pl. IV, 2. Mayer collection.

Double rattle with balls in each. Centrally, two tigers facing one another; laterally, two long-necked bird's heads looking away from one another. Centrally at the top a loop for suspension. Height 104 mm. Grey patina.

Pl. IV, 3 (K. 10295). Bought in Peking.

A smaller piece forming exactly half of the splendid Mayer specimen described above. The parallels are so striking that it is hardly necessary to describe this piece in detail. It should only be noticed that this single rattle has its loop at the top of the tiger's head. This specimen has a rather rich variegated green and brown patina and in addition thick layers of calcareous incrustation. It was formerly reproduced by Prof. Percival Yetts in a paper: ›Chinese contact with Luristan bronzes‹, Burlington Magazine, August 1931.

Pl. V, 1 (K. 11090: 27). Karlbeck 28/29. Bought in Peking.

This rattle is of a type differing widely from the two preceding ones, although there are certain similarities between the three: The rattle itself is at the bottom of the piece; upon the side branch there is a bird's head, upon the main branch a quadruped, in this case a stag. Blackish patina with large spots of calcareous incrustation and, in sheltered places, patches of desert sand. Length of the whole piece 106 mm.

*Axe.*

Pl. VI, 2. In the beautiful Mayer collection is an axe of a well-known Ordos type with a socket and almost circular blade. In the centre of the blade is a lozenge-shaped, sunken figure. At the base of the blade, partly encroaching upon the socket, is a decoration in the shape of two-winged arrow-heads. On the other side of the blade the arrow-heads are missing. On the dorsal side of the socket a long narrow opening. The socket is open at the top. Length of socket 85 mm. Pleasing green patination.

*Various animals.*

Pl. V, 4 (K. 11290: 25). Karlbeck 31/32. Bought in Peking.

Resting deer. The antlers form a solid body somewhat reminding us of the ›hoof and leaf pattern‹, which is also very typically represented by ›three leaves‹ running from the muzzle to the knee. Length of piece 82 mm.



Pl. VI, 1 (K. 11290: 59). Karlbeck 31/32. Bought in Peking. Probably from Yülinfu.

A curious piece consisting of two animal heads connected by two transverse bars. Surface smooth with slight traces of gilding.

The patina is rather different from that generally occurring on the Ordos bronzes: It is richly variegated in different shades of green, red, white and yellow, chiefly reminiscent of the patina on ancient Honan bronzes.

Length 75 mm.

Pl. VII, 1. H. R. H. the Crown Prince's collection.

Young deer, a piece of very charming appearance in spite of the exaggerated ear and the too long legs.

Pl. VII, 2. Mayer collection.

A wild ass with the tail shaped like the horn of an ibex. Interior hollow. Large perforations not only for mouth and eyes but also at the base of the limbs. Copper-red metal. Height 66 mm.

Pl. VII, 3 (K. 12005: 9). Larson collection. Probably Ordos.

An almost flat object with a big loop on the obverse side. A bear-like animal-head with wing-like ›whiskers‹. Heavy green and brown patina.

Pl. VII, 4 (K. 12005: 7). Larson coll. Probably from the Ordos desert.

Owl with strongly stylized collar. Brownish-black patina. In the centre cavity a straight loop for attachment.

Pl. VIII, 1 (K. 11290: 28). Probably from Sianfu.

Hedgehog standing upon a rectangular socket. Probably a pole-top.

Pl. VIII, 2 (K. 11152: 4). Joel Eriksson coll. Region of Hattin Sum, Inner Mongolia.

Resting horse with reclining head. Surface dull copper-brown.

Pl. VIII, 3. Mayer collection.

Couched tiger with the head of a long-eared (?) game-animal between the nose and the forefoot. On the obverse side two clasps, one at the back of the head, the second on the back of the loin. Green spotted patina. Length of plaque 104 mm.

*Plaques.*

Pl. IX, 1. Mayer collection.

Rectangular plaque of soft, copper-red metal. Frame decorated with sunken rectangles in the middle of which is a raised longitudinal line.

Two birds in heraldic position with interlaced necks. Length of plaque 108 mm.

Pl. IX, 2. Mayer collection.

Dome-shaped plaque with a string-like border. A camel attacked by a carnivore. Below the hind feet of the carnivore the head of a second animal of the same species. Length of plaque 124 mm. Metal copper-red and very soft.

*The Ton Ying set.*

One of the outstanding features of our exhibition was a set of eight pieces lent by Messrs. Ton Ying & Co, New York. This set consists of the following objects:

1. The long-horned antelope, Pl. X.
- 2, 3. Two standing ibexes, Pl. XI.
- 4, 5. Two double geese, Pl. XII.
6. Piece with playing dog, Pl. XIII.
- 7, 8. Two long tubes with standing animals, Pl. XIV.

All these pieces have the same greenish patina and the same kind of incrustation. It seems quite likely therefore that they all belong to one find.

Pl. X. Long-horned antelope with the points of the horns resting upon a fork. Nose strongly stylized with lateral protruding nostrils and a vertical projection beneath the nose.

Socket rounded, rectangular, open at the top and perforated at both sides by big holes. Height 168 mm.

Pl. XI. Two ibexes, probably forming a pair, cast in different moulds. The interior of the bodies is hollow and this cavity continues forwards into the ventral side of the neck. The eye-holes also communicate with the main cavity of the body. The ends of the horns are supported by a fork-like body resting upon the back of the neck. Halfway up the horns is a transversal supporting bar. The socket is oval in shape. The socket is perforated with a hole in the front in one piece and with holes on both sides in the other. Height 179 mm and 175 mm.

Pl. XII. Two pieces in the shape of a goose with a small one standing upon its back. Inside the big bird is a rather heavy bronze-ball, the whole forming a rattle. The socket is flattened. In the sides of the socket there are rectangular windows, three in one specimen and 4 in the other. Height 190 mm.

The five pieces described above, the long-horned antelope, the two ibexes, and the geese, are all of the same construction. They very likely served to decorate the tops of poles carrying banners or something of that kind.

Pl. XIII, 1. Hollow object open at the back and at the bottom. The main feature is a dog (?) in a playful pose. Length 86 mm.

Pl. XIV. Two long horizontal bronze tubes, open underneath and at one end, continuing downwards in a short vertical tube. Upon each tube is a row of eight carnivores, the tail of the preceding carnivore touching the forehead of the following one. The last one has quite a big tail. The tubes are slightly curved horizontally. On one side there is a loop on the foremost part of the long tube and another on the short vertical tube. Length 282 mm.

#### *Two pole-tops.*

Pl. XV. Pole-top belonging to Mr. A. Hellström.

Crowned by two ibexes with turquoise inlay in the nostrils. The socketed lower part transversely depressed, with a window in each of the flat sides.

The two animals are placed in a peculiar way obliquely upon the socketed part, so that the right animal projects slightly beyond the basement. Height of the socketed part 54 mm. Maximum diam. of the socket 52 mm. Smooth dark patina.

Pl. XIII, 2 (K. 11290: 22). Karlbeck 31/32. Bought in Peking.

The Hellström specimen just described is a true pole-top comparable with the Ton Ying specimens shown in Plates X—XII. The object now about to be described is of a different kind and belonging to a group of animal figures, hollow below, which are fairly abundant among the Ordos bronzes. Very likely this specimen was attached to some kind of vertical wooden beam, the top of which was inserted into the animal's body. The bronze was affixed to this beam by means of nails through the holes in the feet.

The main object is an Argali sheep in full figure. Upon its back rests a structure strongly recalling a candle-holder. The middle portion of this structure in an openwork expansion containing a bronze ball and evidently intended to serve as a rattle.

The top socket has the shape of an inverted cone, which is open underneath.

Strong variegated patina of vivid green and oxide-red. In small sheltered spots there are below the verdigris traces of gilding. Length of the animal 120 mm. Height of the whole object 82 mm.

It is difficult to guess for what purpose this unique piece was intended. As pointed out above, it was apparently attached to a vertical wooden beam. This must have belonged to a movable object, as for instance a cart, as the rattle could function only when in motion. The topsocket may have carried a miniature wooden mast for floating a streamer.

*Stone object.*

Pl. XVI. K. 1951.

In the southern part of the area of the Ordos bronzes, in Hsuan Hua Hsien. there was found in the hamlet of Shang P'o Ti a very curious object cut in impure red sandstone, or rather, volcanic agglomerate.

The lower part of this stone object is only roughly hewn and was probably intended to fit into a socket in a wooden (?) fundament. Out of a »spathe» with a V-like margin rises a body culminating in two animal heads, to the left a dog or bear, to the right a bird.

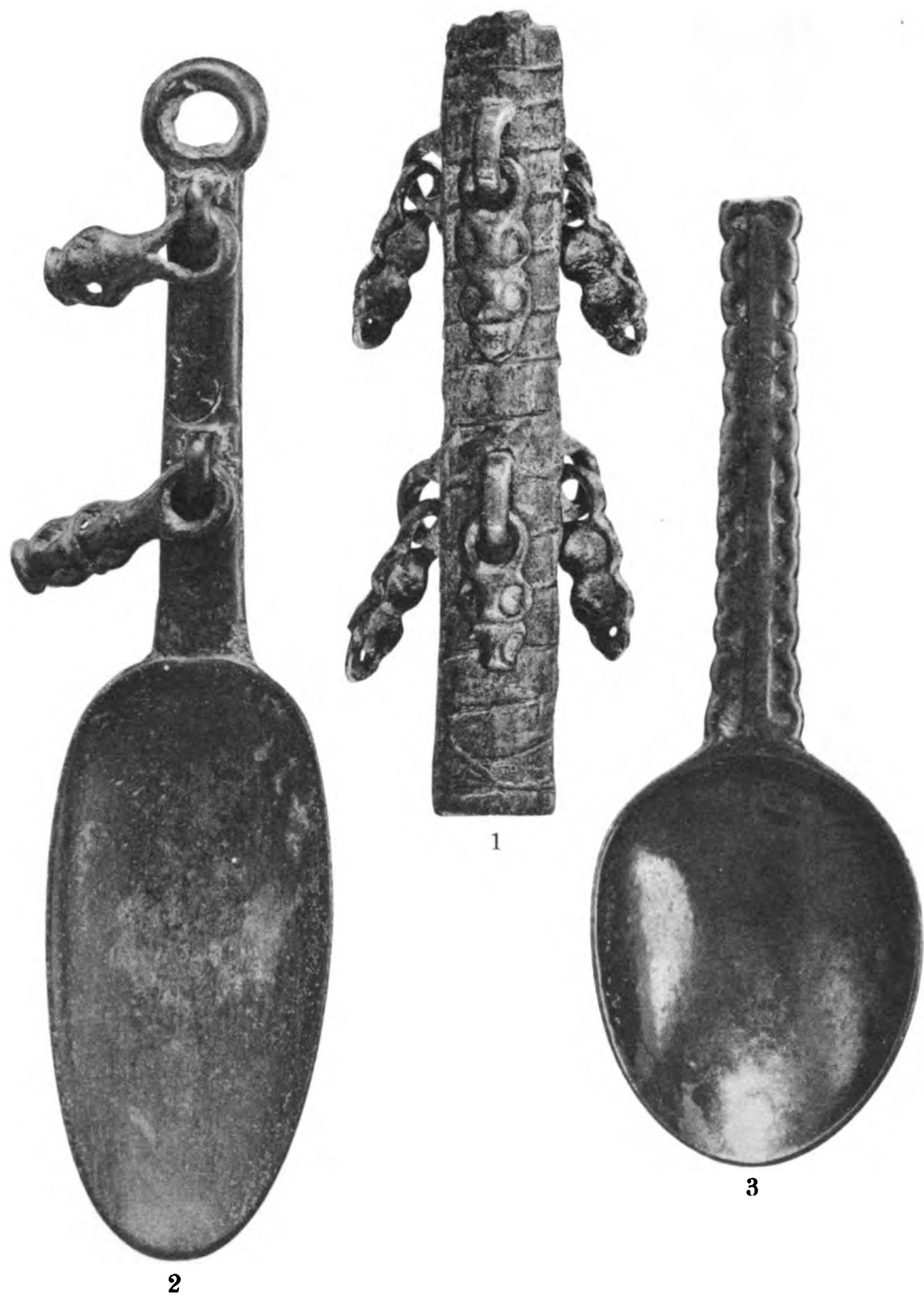
On the obverse side the same features are shown but more obscurely.

This stone sculpture has no parallel in Chinese sculptural art, and we may be quite justified in tentatively referring it to Ordos art. Length of object 200 mm

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1



2



3



4







1



2



3

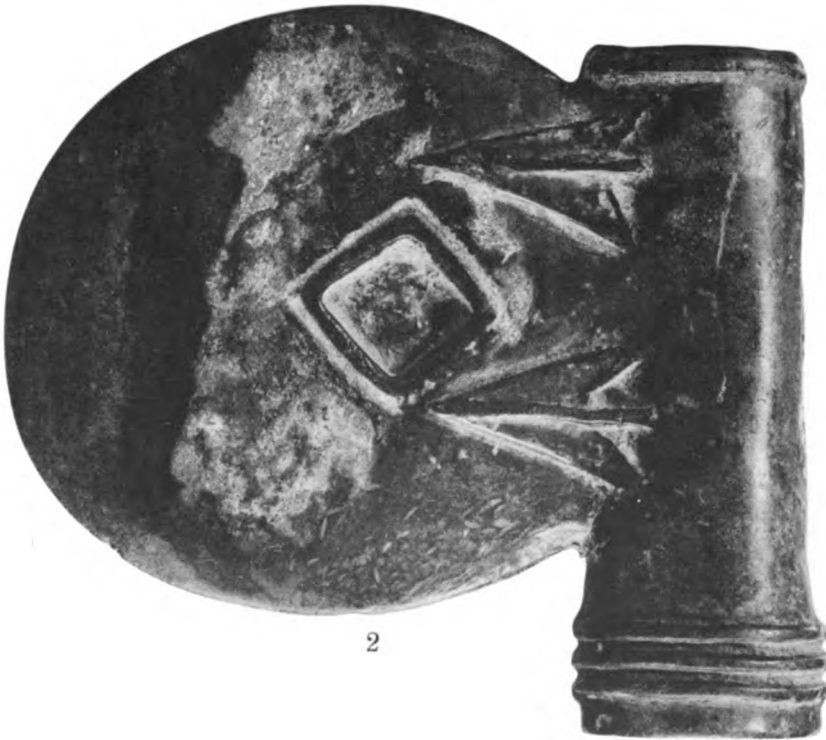


4





1



2







1



2



3



4







1



2



3





1



2



3





1



2



















1



2

















# DIE FUNDE VON LUAN P'ING UND HSUAN HUA

VON

*T. J. ARNE*

## VORWORT.

Es ist eine bedauerliche Tatsache, dass wir so wenige chinesische und mongolische Bronzefunde kennen mit Aufzeichnungen über ihre Herstammung und zuverlässigen Berichten, die uns erzählen, welche Gegenstände zusammen gefunden wurden.

Von echt chinesischen Bronze-Funden gibt es einige wenige, welche eine gut bezeugte Zusammengehörigkeit zeigen, wie z. B. der Hsin Cheng-Schatz von Bronze-Gefässen (Honan), der Fund von Li Yü (nördl. Shansi) und vor allem die gut festgestellten Ausgrabungen, die von Doktor Li Chi und seinen Kamaraden in Anyang im nördlichen Honan unternommen und beschrieben worden sind.

Hinsichtlich der Nomaden-Bronzen, welche in grossen Mengen auf den Steppen der inneren Mongolei, speciell dem Ordosgebiet und an der chinesisch-mongolischen Grenze gefunden wurden, tasten wir jetzt noch vollständig im Dunkel. Tausende von kleinen Bronzegegenständen, die einem starken, vortrefflichen Tierstil Ausdruck geben, sind durch Kaufleute ans Licht gebracht und unter Museen und privaten Sammlern in Europa und den Vereinigten Staaten verteilt worden. Noch immer, bis jetzt, und trotz des reichlichen Materiales wissen wir praktisch genommen nichts über den Zusammenhang, in welchem diese kleinen Bronzen von den Nomaden-Kriegern in die Erde gelegt wurden.

Diese praktisch genommen vollkommene Unkenntniss über die Umstände, unter welchen die Nomaden-Bronzen einmal in die Erde gelegt wurden, in Betracht ziehend, sind wir gerechtfertigt zwei Bronze-Funde, welche vor mehr als zehn Jahren an der chinesisch-mongolischen Grenze gesammelt wurden zu beschreiben.

Unglücklicherweise war mir nie eine Gelegenheit gegeben worden diese Orte aufzusuchen und Forschungen über die aktuellen Fundumstände zu machen. Ich muss mich allein auf die Mitteilungen der dortigen Bauern verlassen.

Andrerseits sind alle Gegenstände dieser zwei Funde, wie wir in folgendem sehen werden, bis auf einige wenige Ausnahmen so ähnlich im Typus, Stil und der Patina, dass die lokalen Angaben, sie seien in jedem einzelnen Fall aus einem *fen* gekommen, ganz glaubhaft erscheinen, möglicherweise mit Ausnahme von einem oder zwei Gegenständen, die unten erwähnt werden sollen.

Der erste von diesen Funden wurde im Laufe von 1920 von Luan P'ing Hsien (濼平縣) nicht weit von Jehol entfernt (in der bergigen Gegend nordöstlich von Peking) erworben. Laut der erhaltenen Angaben, wurde der Fund in der Nachbarschaft des Dorfes Shang-Pan-Ch'eng (上平城) welches 5 li südl. von der Hsien-Stadt liegt, gemacht. Vier li von diesem Dorf entfernt befindet sich der genaue Fundplatz Han-Chia-Fen. (韓家墳).

Der Mann, der mir diesen Fund brachte, erzählte mir, dass er sich zu dem Fundplatze begab und dort einige kleine Bronzen auflos, gerade von den gewöhnlichsten Typen, die in dem grossen Funde vorkamen, den er eben im Hause von einem der Dorfleute eingekauft hatte. Die ganze Sammlung die mir von diesem Fundorte gebracht wurde, umfasst 854 Gegenstände (in unserem Kataloge K. 10000: 1—49), meistens sehr kleine Bronzen und auch fragmentarische. Ausserdem gab es in der Sammlung einige Stücke von einfachen Faden, teils weiss, teils blau, weiter kleine Steinstücke, Korn, Stroh und andere Fragmente. Zu dieser Mischung von unabsichtlicher Verunreinigung zähle ich auch einen halben *cash* (Tafel II, 5) mit den beiden Schriftzeichen — — — *yu yüan* (祐元).

Da es sich nur um ein Fragment handelt, können wir es nicht mit vollständiger Sicherheit bestimmen, aber es gehört nach B. Karlgren in die Zeit von frühestens 904, spätestens 1275 n. Chr. Ich zähle dieses Fragment von einem Sung-Cash zu den unbeabsichtigten Mischungen, da aus Gründen, die unten angegeben werden, der Fund um mehr als ein Jahrtausend älter sein muss.

Niemand, dem es bekannt ist, wie alte T'ang- und Sung-Cash zu der Zeit, als wir das Material bekamen (1920), unter der Landbevölkerung Nordchinas im täglichen Gebrauche waren, wird sich darüber wundern, dass eine solche Münze mit anderen Bronzen gelegentlich vermengt wurde.

Der zweite Fund wurde mir erst in Dezember 1924 bekannt. Der Fundplatz liegt in Hsuan Hua Hsien (宣化縣) im nördlichen Chihli (Hopei), nicht weit von Kalgan. Die Stelle liegt 65 li von der Hsien-Stadt und trägt den Namen Huang T'u P'o (黃土坡). Zwei li östlich von diesem Dorfe liegt der genaue Fundplatz, namens Ma An Shan (馬鞍山).

Die Mehrzahl der kleinen Bronzen wurden von einem Dorfbewohner eingekauft, aber die steinernen Gegenstände sowie einige Knochen und Bronzen wurden auf dem betreffenden Platze den die Bauern angegeben hatten, von dem Manne ausgegraben, der mir die Sammlung brachte. Die in dieser Weise ausgegraben Stücke repräsentieren fast alle Typen, die in dem eingekauften Material vorkommen.

Der erste Fundteil, der in unserem Kataloge die Nummer K. 10001: 1—34 trägt, enthält 352 Gegenstände. Im Januar 1927 brachte mir derselbe Mann noch einen zweiten Teil kleiner Bronzen aus Huang T'u P'o (K. 10603: 1—89), zusammen 154 Stücke.

J. G. Andersson.



## I.

## A. DER FUND VON LUAN P'ING.

Die Gegenstände aus dem Luan P'ing-Grabe bestehen aus Waffen und Schneidegeräten, Zugehör von Kleidungen, anderen Schmuckgegenständen, sowie einigen wenigen Hausgeräten (Pfriemen). Gefässe wurden nicht beobachtet, weder solche aus Bronze noch aus Holz oder Ton. Es wäre denkbar, dass manche Riemenbeschläge für Pferdegeschirr abgesehen waren.

Die Tüllenbeile sind vier an der Zahl (Tafel II, 1—4). Sie dürfen eher als Arbeitsgeräte als Waffen bezeichnet werden. Zwei derselben mit viereckig-trapezoidischem Durchschnitt haben Querschneide. Deren Ausschmückung besteht höchstens aus einer erhöhten Kante an der Mündung. Ohren fehlen.

Tüllenbeile von ähnlichem Typus scheinen verhältnismässig gewöhnlich zu sein in der Provinz Hopei, sowie in den südlich davon gelegenen Provinzen, z. B. in Anhui, Honan, Yünnan. Die Formen ohne Ohren sind am gewöhnlichsten, aber Exemplare mit einem Ohre fehlen nicht ganz.<sup>1)</sup>

Ein paar Tüllenbeile von Anyang sind auf allen vier Seiten ringsum die rechteckige Mündung mit reicher, charakteristischer Chou-Ornamentik geschmückt und sind wahrscheinlich die ältesten einigermaßen datierbaren Tüllenbeile von China. Die sibirischen Bronzebeile er bieten Ähnlichkeiten mit den chinesischen, die ohrenlosen Formen sind jedoch unter ihnen weniger allgemein, während sie auf dem Gebiete der Ananinokultur, westlich vom Ural, alleinherrschend werden.

Die einzige wirkliche Waffe in dem Luan-P'ing Grabe ist ein Bronzedolch, (Tafel I, 1) mit einem von den Schmalseiten aus durchbohrten, mit einer Mittelfurche versehenen Griffknopf und einer kleinen zweizipfeligen »Querstange« am Übergang zu der Klinge. In den Ostasiatischen Sammlungen in Stockholm gibt es laut Prof. J. G. Andersson 67 Dolche verwandter Formen aus dem Ordosgebiete (J. G. Andersson, *Hunting Magic in the Animal Style*. Tafel VI—IX, Bulletin N:o 4 of the Museum of Far Eastern Antiquities, Stockholm 1932). Einige von ihnen zeigen Übereinstimmungen was die Querstange betrifft, aber kaum irgend eine hinsichtlich des Griffknopfes. So verhält es sich auch mit vielen ähnlichen Bronzedolchen aus dem Minussinsk-Distrikt am oberen Jenissej.<sup>2)</sup> Es lässt sich andererseits nicht bestreiten, dass nahe Verwandtschaft zwischen den Minussinskdolchen und solchen aus Eisen von skythischem Gebiet in den Gouvernemen ten Kiev und Poltava besteht<sup>3)</sup> sowie mit deren Ablegern in dem Ananinokulturgebiet am Flusse Kama in Nordost-Russland.<sup>4)</sup>

<sup>1)</sup> O. Janse, *Un groupe de bronzes anciens*, Tafel X, 1, 2.

<sup>2)</sup> Radloff, *Sibirskija drevnosti I*, 2 (Mat. po arch. Ross. 5). Vergl. besonders Tafel X, Fig. 1. F. Martin, *L'âge du bronze au Musée de Minoussinsk*.

<sup>3)</sup> *Collection Khanenko II*, Tafel II und III.

<sup>4)</sup> Tallgren, *L'époque dite d'Ananino* (Finska Fornminnesfören. Tidskrift XXXI), Fig. 7, 13.

Die Ähnlichkeit zwischen den skythischen Dolchen und Schwertern einerseits und den chinesischen andererseits ist unzweifelhaft, und dieser Eindruck wird noch verstärkt, wenn man den Knopf und den Griff von einer Anzahl von Dolchen aus dem Ordosgebiet, die Prof. J. G. Andersson publiziert hat, mit den in Russland gefundenen vergleicht. Die Antennenknöpfe sind gewöhnlich bei den skythischen und sibirischen Dolchen sowie an den Schwertern, aber man vermisst sie nicht bei den chinesischen, obgleich sie volutenartig zusammenwachsen (Andersson, *Hunting Magic*, Tafel VI, 1, 2). An einzelnen skythischen Schwertern ist die Querstange zu ein paar Raubvögelköpfen umgeformt<sup>1)</sup> und ein solches Eisenschwert aus Ungarn<sup>2)</sup> zeigt eine Querstange mit zwei Raubtieren, wahrscheinlich Löwen, die recht stark an die Kleidungsbeschlüge von Luan P'ing erinnern. Dieselbe Art von Querstangen mit zwei Vogelköpfen kommen bei den Ordosdolchen nicht selten vor.<sup>3)</sup>

Auf die Ähnlichkeit zwischen den nordchinesischen und den sibirischen Bronzemessern hat man schon längst hingewiesen. In den Sammlungen des Ostasiatischen Museums in Stockholm finden wir nordchinesische Bronzemesser mit dem in Südsibirien gewöhnlichen Griffabschluss mit einem dreieckigen Loch oder mit einer gegen die Schneideseite vorspringenden Endscheibe.<sup>4)</sup>

In dem Luan-P'ing-Grab gab es 7 Messer, (Tafel I, 2—8) von welchen nur zwei verhältnismässig vollständig sind (eines von diesen hat eine abgebrochene Spitze). Unter diesen zeichnen sich drei durch einen im Verhältniss zu der Klinge sehr schmalen Griff aus (mit spitzovalem oder beinahe rechteckigem Durchschnitt), abgeschlossen mit einem grossen ovalen Ringe. Dieser Messertypus kommt unter den Ordosbronzen verhältnismässig selten vor, — ich habe ihn nur noch bei sieben Exemplaren unter etwa 250 Bronzemessern beobachtet. Unter den sibirischen Messertypen, die von Radloff, Martin und Tallgren veröffentlicht worden sind, kann man ihr Vorkommen auch nicht feststellen. Wohl ist der grosse ovale Ring vorhanden, aber Griff und Klinge sind so ziemlich gleich breit. Dieser Messertypus dürfte gewissermassen mehr chinesisch und ein Prototyp für die chinesischen Messermünzen sein, auf die ich später zurückkommen werde.

Messer mit breitem Griff und kleinem rundem Ring am Ende sind sowohl im Ordos- als im Minussinskgebiete allgemeiner. Unter den ersteren gibt es in den Ostasiatischen Sammlungen in Stockholm verschiedene Exemplare mit der schiefen Schneide versehen, die für Ledermesser charakteristisch ist.

Aus Luan P'ing liegen 10 Bronzepfeilspitzen vor, wovon 7 mit innerer Tülle und drei mit Angel versehen sind, die aber an einem Exemplar abgebrochen war. (Tafel III, 1—10). Zwei dieser letztgenannten Pfeilspitzen sind dreizipfelig, die

<sup>1)</sup> *Collection Khanenko II*, Tafel III, 5.

<sup>2)</sup> Ellis Minns, *Scythians and Greeks*, Seite 69.

<sup>3)</sup> Andersson, *Hunting Magic etc.* Tafel VI, 2, VIII, 2.

<sup>4)</sup> Andersson, *Hunting Magic*, Tafel II, 1, 4. Tafel III, 3, 4. O. Sirén, *Documents d'art chinois*. Tafel II. Tallgren, *Coll. Tovostine*, Tafel V.

eine ist mit wirklichen Flügeln versehen, und hat ihre Gegenstücke am Jenissej<sup>1)</sup> sowie in der Ukraina.<sup>2)</sup> Die zweizipfelige breite Pfeilspitze mit Angel dürfte seltener sein und ist vielleicht auch nicht gleichzeitig mit den dreieckigen »skythischen« Spitzen. Eine kleinere Anzahl von Exemplaren sind aus dem Ordosgebiet vorhanden. Besonderen Charakter, obgleich auch sonst vom Ordosgebiet bekannt, haben die beiden mit zwei Widerhaken und innerer Tülle versehenen Spitzen. Hingegen sind die mit Flügeln versehenen dreieckigen Pfeilspitzen äusserst gewöhnlich sowohl in Sibirien als auch auf skythischem oder skythisch beeinflusstem Gebiet in Süd- und Ost-Russland.<sup>3)</sup> Es gibt davon Tausende unter den Ordosexemplaren in den Ostasiatischen Sammlungen in Stockholm.

Die drei Beinpfailspitzen des Luan P'ing-Fundes haben viereckigen Querschnitt und abgeflachte Angel. Beinpfailspitzen sind nicht ungewöhnlich in Südrusslands skythisch-sarmatischen Gräbern; aber sie haben ein anderes Aussehen — u. a. scheinen sie mit Tülle versehen zu sein.<sup>4)</sup> Wahrscheinlich sind die Beinpfailspitzen auch in den sibirischen Funden gewöhnlich, obgleich sie nicht gesammelt worden sind. Sie müssen ohne Zweifel als Abkömmlinge eines primitiveren Kulturstadiums betrachtet werden.

In dem Grabe kamen ferner ein paar lange Bronzefriemen mit viereckigem Querschnitt vor (Tafel IV, 5, 6). Es ist möglich, dass sie Griffe aus Holz hatten.

Zahlreich sind die Gürtel- und Riemenbeschläge. In erster Linie sind neun Beschläge zu erwähnen (einer beschädigt), wovon acht rechteckige Form haben und einer quadratisch ist (Tafel IV, 1—4 und Tafel XIV, 1, 2). Letzterer, sowie die drei kleineren rektangulären Beschläge waren wahrscheinlich an dem Riemen mittels eines an der Hinterseite angemachten Bronzbandes befestigt gewesen (Tafel XIV, 2). Dieses war an dem quadratischen Beschläge zerbrochen gewesen und wurde durch ein schmales Eisenband ersetzt, also eine Art Parallele zu dem Pferdegebiss in dem bekannten gotländischen Eskelhembfund, der auch vom Ende der Bronzezeit stammt. Der Ausschmückung der rechteckigen Beschläge muss besondere Beachtung geschenkt werden. Sie besteht an den grösseren Beschlägen aus Zickzacklinien, die quer zwischen den langen Aussenrändern angebracht wurden, während die kleineren Beschläge mit in zwei Zonen laufendem Mäander und einer Art von Zahnornament an den Enden geschmückt sind.

Diesen entsprechende Riemenbeschläge kenne ich nicht ausserhalb des Ordosgebietes.

An Riemen waren sicher die gewölbten Bronzeknöpfe angebracht gewesen. Sie tragen an der Hinterseite eine bandförmige Öse. Die fünfzig grösseren Knöpfe (Tafel VII, 1—6, 13—15), 2—2,5 cm im Querschnitt, sind meistens ringsum die

<sup>1)</sup> Tallgren, *Coll. Tovostine*, Taf. VII, 32.

<sup>2)</sup> *Coll. Khanenko II*, Tafel VI, 209.

<sup>3)</sup> Paul Rau, *Die Gräber der frühen Eisenzeit im unteren Wolgagebiet*, *Studien zur Chronologie der Skythischen Pfeilspitze*, Pokrowsk 1929.

<sup>4)</sup> A. Bobrinskij, *Kurgany i sluzajnyja archeol. nachodki II*, Tafel XIV.

Kante mit strahlenförmigen Querstrichen verziert. Der kleinen Knöpfe (Tafel VIII, 30—32) gibt es eine Anzahl von 128, neben welchen noch einige Fragmente vorkommen.

Vollständig übereinstimmend mit diesen Knöpfen sind die in Tomsk in Sibirien und auch in skythischen Gräbern in Südrussland angetroffenen. Ich will besonders ein grosses Kurganengrab bei Volkovtsy im Gouvernement Poltava<sup>1)</sup> erwähnen. Dieses enthielt ein männliches Skelett mit reicher Ausrüstung, das in einer auf dem flachen Erdboden angebrachten Holzverkleidung untergebracht und von einem 13 m hohen Erdhügel bedeckt war. Ein Teil von den im Grabe gefundenen Gegenständen, so z. B. ein Eisenschwert oder langer Eisendolch, durchbrochene Schellen, welche die Form eines abgeschittenen Kegels haben, tierähnliche Goldbeschläge, die an der Kleidung oder an der Hülle des Köchers festgenäht wurden, runde bauchige Knöpfe aus Bronze mit quengeriefelter Kante und ohne, die zum Pferdegebiss gehörten, eine verzierte Goldtube, all dies erinnert an den Inhalt unserer chinesischen Gräberfunde.

Das Volkovtsygrab dürfte um das Jahr 300 v. Chr. datiert werden können, u. a. durch das Vorkommen eines attischen lackierten Tongefässes<sup>2)</sup> und eines wahrscheinlich attischen Helmes. Rostovtzeff nennt das Ende des IV und den Anfang des III Jahrh. v. Chr. Recht ähnliche Knöpfe wurden auch nach Ananino von skythischem Gebiet importiert.<sup>3)</sup>

Neunzehn geschlossene, ovale Bronzekrampen (Tafel VIII, 33—34) sassen ohne Zweifel an einem Riemen aufgereiht. Eine Anzahl kleiner länglicher, an den Kanten bauchiger Bronzebleche (Tafel VIII, 9, 10) waren durch zwei kleine Ösen an einem Riemen befestigt worden. Wie dünn diese Beschläge auch sein mögen, so erwecken sie doch den Eindruck davon gegossen zu sein. Es wäre doch denkbar, dass die Ösen an den ausgehämmerten Blechen festgelötet wurden. Ähnliche wenn auch grössere Beschläge kommen massenhaft unter den Ordosbronzen vor.<sup>4)</sup> Eine Anzahl von Riemenbeschlägen von Ananino erinnern stark an diese Riemenbeschläge.<sup>5)</sup>

Als Hängeschmuck waren verschiedene Bleche und Perlen aus Bronze verwendet worden (Tafel VIII). Die kleinen Bronzeperlen haben manchettenähnliche Form (Tafel VIII, 35—37), die Hängebleche sind teils dreieckig mit einer Öse an dem spitzen Ende, (Tafel VIII 11—22), teils achtförmig mit einer quer gestellten Öse oben, (Tafel VIII, 7—8). Solche gibt es in wenigstens 150 Exemplaren.

Zu Hängeschmucksachen dürfte man auch 10 mehr oder weniger herzförmige oder runde, kleine durchbrochene Bronzen mit vertikalen Ösen zu beiden Seiten, zählen dürfen (Tafel VII, 8—12). Man wird beinahe dazu verlockt in dem durch-

<sup>1)</sup> *Collection Khanenko, Antiquités de la région du Dnjepr, II, Tafel XXI, 401. Rostovtzeff, Skythien und der Bosphorus, S. 454 ff.*

<sup>2)</sup> *Coll. Khanenko, II, Tafel XXXIV, 797.*

<sup>3)</sup> Tallgren, *L'époque dite d'Ananino*, Fig. 38, S. 144.

<sup>4)</sup> Andersson, *Hunting Magic*, Tafel XXIX, 1, 2.

<sup>5)</sup> Tallgren, *L'époque dite d'Ananino*, Fig. 39, Fig. 103, 10, 11.

brochenen Teil eine ursprüngliche Tierfigur zu sehen, die bei gewissen Exemplaren zu einer Anzahl von Kreisen degeneriert ist.

Besonderes Interesse erweckt eine von einem Bronzering umschlossene, durchbrochene Tierfigur, die einen Hirsch darstellt oder vielleicht ein Renttier oder Elch (Tafel V, 9). Leider ist dieser Gegenstand recht beschädigt, man dürfte doch annehmen können, dass das Tier den Kopf nach vorne wendet.

Ein paar derartige Hängeschmuckgegenstände (Tafel XIV, 7, 8) wurden 1917 von Prof. Veselovskij bei Jelisavetskaja Stanitsa im Kubangebiet, Kaukasus, ausgegraben. Durch das Entgegenkommen des russischen Archäologen G. Borovka hat sich mir die Gelegenheit geboten diese Bilder zu publizieren. Ihre Ähnlichkeit mit den Hängeschmuckgegenständen von Luan P'ing ist so auffallend, dass ich vermute, letzteres sei ein Importstück. Borovka datiert die kubanischen Stücke in das 5. Jahrh. v. Chr. Geb., während Rostovtzeff es wahrscheinlich etwas später datieren würde.<sup>1)</sup> Verwandte runde Hängeschmuckgegenstände (Tafel XIV, 5, 6) mit Pferde- und Bockmotiven wurden im Gouvernement Tomsk, am Flusse Jaj gefunden (Ausgrabungen von Kuznetsoff, Eremitage, Leningrad). Eine Hirschfigur verwandter Art ist in »Drevnosti Minusinskago Muzeja, Atlas von D. Klemenž«, Tomsk 1886, Tafel X, 11, veröffentlicht worden.

Ein Verbindungsglied mit dem Westen bildet auch eine kleine Bronzeplatte, ursprünglich mit drei Spiralen geschmückt und an der Hinterseite mit ein paar Ösen versehen, die zur Befestigung an einem kleinen Riemen dienten (Tafel VI, 5). Vollkommen gleiche Stücke wurden auch von Prof. J. G. Andersson in Gräbern in der Chen-fan-Oase, also in Nordwest-China an der Grenze zur Mongolei<sup>2)</sup> angetroffen. Sehr ähnliche Beschläge mit Spiralschmuck (bis zu vier Spiralen), sind von Kotlovka am Flusse Kama, innerhalb des Ananino-Kulturgebietes, bekannt.<sup>3)</sup>

Zu den Gürteln und Riemen gehören zwei Riemenschnallen (mit Haken versehene Ringe mit Ösen) und zwei Gürtelhaken von bekanntem chinesischem Typus.

Die ersteren (Tafel VI, 3, 4) haben in Ordos<sup>4)</sup> viele Gegenstücke. Einige sind aus der Gegend von Lou Lan in Ost-Turkestan bekannt, vom Minussinskgebiet und von Semipalatinsk; verwandte Formen von einfacherer Beschaffenheit besitzt man aus skythischen Gräbern in Süd-Russland.<sup>5)</sup> Besonders ähnlich ist ein aus

<sup>1)</sup> M. Rostovtzeff, *Iranians and Greeks in South Russia*, Fig. 21, A.

<sup>2)</sup> *Guide to the exhibitions of the Museum of Far Eastern Antiquities*, Stockholm 1933, S. 39.

<sup>3)</sup> Tallgren, *L'époque dite d'Ananino*, Fig. 103, 18, S. 146. Tallgren bringt sie mit spiralenförmigen Fibeln aus Hallstatt und Griechenland in Verbindung und vermutet Einflüsse von jonischer Kunst auf die skythische.

<sup>4)</sup> J. G. Andersson, *Hunting magic*, Tafel XI und Tafel XII, 4, 6. O. Janse, *Un groupe de bronzes anciens*, Fig. 12, (Bulletin N:o 3 of the Museum of Far Eastern Antiquities, Stockholm 1931).

<sup>5)</sup> Vergl. z. B. *Coll. Khanenko, II*, Tafel XV, 315 aus dem hier erwähnten Volkovtsy-Kurgane.

dem Kaukasus stammendes Exemplar. Es ist bei Artschadzor im Džavanschir-Distrikte von dem Gouvernement Jelisavetpol gefunden.<sup>1)</sup>

Zwischen den Gürtelhaken von Luan P'ing (Tafel VI, 1, 2) und ähnlichen von dem Gebiet der Ananinokultur besteht eine gewisse Verwandtschaft; der Haken an den chinesischen Exemplaren ist aber nach oben gebogen, während er an den russischen nach unten gebogen wurde; an der Unterseite haben die chinesischen einen Knopf, die russischen aber eine Öse. Tallgren glaubt, dass die Ananino-Gürtelhaken skythische Vorbilder haben.<sup>2)</sup> Den ursprünglichen Zusammenhang zwischen den Formen in Russland und im äussersten Osten, muss man einstweilen noch als in Dunkel gehüllt, betrachten.

Besonders interessant sind die gegossenen, fast ganz glatten Tierfiguren aus Bronze, (Tafel V), die an der Kleidung festgenäht wurden. Sie sind an der Rückseite mit Ösen versehen. Die grösste erreicht eine Länge von 14,5 cm und stellt wahrscheinlich einen Tiger, mit von vorne gesehenem Kopf, dar. (Die Kiefer doch von der Seite). (Tafel V, 1.) Beide Schenkel und die Ohren sind durch Spiralen gekennzeichnet. Die Beine sind ungewöhnlich kurz. Die kleineren Figuren geben Pferde und Raubtiere wieder, alle in liegender Stellung, mit nach vorne gestreckten Füßen. Die durchbrochenen Löcher können praktische Bedeutung gehabt haben, aber es ist nicht ausgeschlossen dass sie nur zu dekorativem Zweck angebracht wurden. Es gibt acht derartige Exemplare, von welchen drei fragmentarisch sind. Ausserdem kommt ein flacher Kopf in demselben Stil vor (Tafel V, 7), und ein runder skulptierter Tierkopf mit Hals, (der Körper fehlt jetzt) (Tafel V, 8).

Wie bekannt, sind derartige tierförmige Beschläge, welche an Gewändern oder an anderen Textilien festgenäht wurden, in dem skythischen Kulturkreis äusserst gewöhnlich. Oft sind sie aus Gold hergestellt, werden aber im Osten in Bronze nachgeahmt. Was ich als Tiger deute, ist hingegen ostasiatisch. In Nordchina wurde dieser Tiger auch aus Goldblech hergestellt, welches mit Türkisen besetzt war.<sup>3)</sup>

Als Hängeschmuck muss möglicherweise eine kleine kegelförmige Schelle ohne Klöppel aber mit oberer Öse angesehen werden. (Tafel VIII, 1.) Kleine, kegelförmige, durchbrochene Schellen sind im Ordosgebiete gewöhnlich. Wir begegnen ihnen westlich im Tomsker Gouv.,<sup>4)</sup> in Ostrussland, Kaukasus und Südrussland. So verhält es sich auch mit den kleinen Metallspiegeln mit einer Öse an der Hinterseite, die auch in Sibirien angetroffen werden. In dem Luan P'ingfunde kommt eine kleine, flache, runde, gegossene Bronzeplatte (Tafel VIII, 6) vor, mit einer Öse an der Unterseite, in der Nähe der Kante; sie dürfte als Spiegel gedient haben.

<sup>1)</sup> Fig. 1463 in *Aljbom rizunkov von den Otschoti der arch. Kom. 1882—1898*.

<sup>2)</sup> Tallgren, *L'époque dite d'Ananino*, S. 152, Fig. 113, 114.

<sup>3)</sup> *Ausstellung in Paris 1925*, (Vignier), vergl. auch A. Salmony, *Sino-siberian art*, Tafel XII, 1.

<sup>4)</sup> *Aljbom rizunkov von Otschoti der arch. Kom. 1882—1898*, Fig. 2071.

Dieser Typus ist skytisch, nicht griechisch, und bildet vielleicht den typologischen Anfang zu den späteren chinesischen Spiegeln.

Gegenstände wie die sechs Hängeberlocken (Tafel VIII, 2—5), von welchen eine durchbrochen ist, fehlen nicht unter den Bronzen von anderen Teilen des Ordos-Gebietes,<sup>1)</sup> scheinen aber weiter im Westen nicht bekannt zu sein. So verhält es sich auch wahrscheinlich mit den viereckigen, hohlen Bronzeröhren (Tafel IV, 7, 8), die in wenigen Exemplaren vertreten sind.<sup>2)</sup> Sie sind an einander gegenüber liegenden Seiten mit hintereinander angebrachten Dreiecken und Zickzack-Ornamenten geschmückt, die auch bei sibirischen Dolchgriffen auftreten.<sup>3)</sup>

Von einer Menge von spiralenförmig aufgerollten Bronzedrähten wurden möglicherweise einzelne als Armband benützt (Tafel VI, 7—8). Schliesslich sind einige dünne Silberdrähte (Tafel VI, 6) und etwa 20 Perlen zu erwähnen, worunter eine aus Türkis, eine aus einem achathähnlichen Stein und die übrigen wahrscheinlich aus Speckstein sind (Tafel VI, 9, 10).

Dass alle hier aufgezählten Dinge etwa gleichzeitig und zusammengehörig sind, daran zweifle ich nicht, wenn es auch denkbar wäre, dass der Fund aus einem Doppelgrab für Mann und Frau oder aus ein paar nebeneinander liegenden, gleichzeitigen Gräbern stammt. Skeptischer stehe ich ein paar anderen Gegenständen gegenüber, die auch als aus demselben Grab stammend erwähnt werden. Der eine ist ein ovaler zu einer Schnalle gehörender Rahmen, mit Spuren von Eisenrost an den Enden, die durch eine Querstange, an dem ein Dorn sass, miteinander verbunden waren (Tafel IV, 9); nach abendländischer Auffassung muss dieser aus der Zeit n. Chr. Geb. stammen. Der andere Gegenstand ist massiv, bauchig, kreisrund, hat konkave Innenseite und ist durch Rinnen obenauf in Segmente eingeteilt. Auf der Unterseite befindet sich ein viereckiges Loch, in welchem irgend ein Stiel gesessen hat (Tafel II, 6).

## B. DER FUND VON HSUAN HUA.

Der Gräberfund von Hsuan Hua Hsien ist in vielem dem von Luan P'ing ähnlich. Er enthält 5 *Tüllenbeile* aus Bronze, unter welchen sich ein langes, schmales, mit nahezu quadratischem Querschnitt befindet, dessen Ausschmückung in der Nähe seiner Mündung aus drei erhabenen, ringsum laufenden Wulsten besteht (Tafel IX, 2—5). Ferner kommt ein *Bronzedolch* vor, der mit den chinesischen Typen in nahem Zusammenhang stehen dürfte. Die schmale dünne Angel mit ihrer erhabenen Rippe, die nebst zwei anderen längs der Klinge fortsetzt, erinnert an die Griffpartie der Messermünzen, und oben krönt diese Angel ein hohler

<sup>1)</sup> J. G. Andersson, *Hunting Magic*, Tafel XVIII, 14, 15.

<sup>2)</sup> J. G. Andersson, *Ibidem*, Tafel XVII, 12—15.

<sup>3)</sup> A. Salmony, *Sino-siberian art*, XXXVII, 5.

Knopf (Tafel IX, 1). Ein Schwert von verwandtem Typus liegt in den Hallwyl'schen Sammlungen vor; ähnliche Dolche gibt es aus Chihli.<sup>1)</sup>

Von Messern gibt es ein paar Exemplare. Das eine hat schmale Griffangel und einen grossen Ring am Ende (Tafel IX, 6, 7) und ist einigen Exemplaren von Luan P'ing ähnlich.

Besondere Bedeutung hat eine mit letztgenanntem Messer dem Typus nach übereinstimmende Messermünze, die das Schriftzeichen T'u (土) trägt. (Tafel IX, 6.)

Es wird angenommen, dass diese Art Münzen während der letzteren Hälfte der Chou-Periode geprägt wurden. Die Münze kann folglich kaum vor 700 v. Chr. in die Erde gekommen sein, wohl aber etwas später als 250. Ebenfalls kann es möglich sein, dass sie früher als 250 beerdigt wurde.<sup>2)</sup>

Pfeilspitzen sind in 2 Exemplaren vertreten. Eine ist mit Angel versehen und mit zwei Widerhaken, die oberhalb des fazettierten, viereckigen Mittelteiles enden. Die andere Pfeilspitze hat eine innere Tülle mit zwei unterhalb derselben vorstehenden Flügeln (Tafel X, 8, 9).

Ein Fragment eines eigentümlichen zweischneidigen Dolches, scheint in einer abgebrochenen runden Tülle vorzuliegen, von deren Basis eine abgebrochene Griffangel ausgeht (Tafel XIV, 3).

Ein kleiner nahezu rechteckiger, platter Hängeschmuck aus Bronze mit Öse findet kein Gegenstück in dem Luan P'ing-Grab. (Tafel XI, 3.).

Mehr als 30 runde, bauchige Beschläge (die grösseren mit strahlenförmigen Strichen als Randverzierung) mit einer unteren Öse in derselben Art wie die von Luan P'ing kommen in verschiedenen Grössen vor. Ausserdem sehen wir eine Buckel mit einer Art mangelhaften Mäanderverzierung, möglicherweise rein chinesischen Ursprungs, und eine hohe Buckel mit niedriger, sie umgebender Kante (Tafel XII, 15—24). Die letztere hat ein Gegenstück in einem etwas niedrigeren Exemplare von Tagarskoje ozero im Minussinskdistrikt (Fig. 206 in Otschot der arch. Kom. 1894).

Eine Art Bronzenagel oder Pfriemen, oben mit zwei einander schneidenden Spiralbändern (Tafel XI, 1) ist ziemlich allein dastehend.

Wir begegnen ferner einem kleinen, flachen, quergeriefelten Bronzering (Tafel XIV, 4), der solchen Ringen gleicht, wie wir sie an Bronzegefässen vom Ch'in-Typus (Huai-Typus) finden. Im übrigen begegnen uns 9 ganze und 6 fragmentarische kegelförmige glockenähnliche Hängeschmuckgegenstände. Die Mehrzahl ist von zwei dreieckigen, einander gegenüberstehenden Ausschnitten durchbrochen (Tafel XI, 7, 9—12). Ein bogenförmiger Spezialtypus hat zwei Einschnitte, ihm fehlt aber die untere Kante. (Tafel XI, 8).

Weiter finden wir eine Menge Typen aus dem Luan P'ing-Grabe wieder. Hier

<sup>1)</sup> O. Janse, *Notes sur quelques épées anciennes trouvées en Chine* (Bull. of the Mus. of Far Eastern Antiquities., 2).

<sup>2)</sup> Vgl. *Ch'üan huo hui K'ao, Ch'üan 3* (Prof. B. Karlgrens Mitteilung) und Guide to the exhibitions of the Museum of Far Eastern Antiquities.



nimmt man zwei tigerähnliche und ein pferdeähnliches Schmuckblech aus Bronze wahr, sowie eine Anzahl von Fragmenten (Tafel X, 10—16), ferner drei kleine massive Pferdefiguren (Tafel X, 17—19), längliche bronzene Gürtelbeschläge, teilweise mit Ösen, von demselben Typus wie die früher erwähnten, (Tafel XIII, 1—10), eine Anzahl Ringe aus dünnem Bronzedraht (Tafel XI, 13), mehrere Pfriemen (Tafel XI, 4—6), eine längliche pfriemenförmige Hängeberlocke (Tafel XI, 2), einen vollkommen rechteckigen Riemenbeschlag mit Mäanderornament und eine Anzahl Fragmente von solchen, »Krampen« und Manchettenperlen aus Bronze, ein paar »herzförmige Beschläge« mit Seitenösen, alles wie im Luan P'ing-Grab, und schliesslich eine Anzahl von interessanten Perlen aus Türkis, Kalkstein und achathähnlichem Stein (Tafel XIII, 15—39).

Zu diesem Grab gehören auch kleinere Reste vom Menschenskelette.

Die Übereinstimmung in dem Inhalt der beiden Gräber ist so gross, dass man sie im Grossen gesehen als gleichzeitig ansehen muss. Die Bronze spielt eine bedeutende Rolle auch für die Herstellung von Waffen und Werkzeugen. Nach europäischen Begriffen lebten die Nomaden, welche diese Gräber angelegt haben, noch in der Bronzezeit. Eisen kommt bloss als Band auf der Rückseite eines viereckigen Riemenbeschlages von Luan P'ing vor.

Die Mehrzahl der Gegenstände gehören der Ordoskultur an. Viele dieser Gegenstände weisen ja Verwandtschaft mit skythisch-sibirischen Gegenständen vom Jenissej auf, und auch von Süd- und Ostrussland, sowie vom Nord-Kaukasus. Einige von ihnen können geradezu als Importgut von westlicheren Gegenden bezeichnet werden, z. B. die von einem Ring umschlossene Hirschfigur, und möglicherweise die runden bauchigen Riemenbeschläge mit gestricheltem Kreisrand. Gewisse andere sind wahrscheinlich chinesischen Ursprunges oder sie sind von chinesischer Kultur beeinflusst. Dahin gehören die Messermünze mit Inschrift, die Messer mit schmaler Angel und grossem Ring, die rechteckigen und quadratischen Gürtelplatten, vielleicht auch die beiden Gürtelhaken (Tafel VI, 1, 2), der Dolch mit dem hohlen Knopf, möglich ist auch, dass die viereckigen Röhren und der gewölbte Knopf mit dem mäanderähnlichen Ornament dahin gehören.

Zwei, drei Gegenstände scheinen aus späterer Zeit zu stammen, und sind in den Luan P'ingfund gemengt worden, nämlich ein ovaler Schnallenrahmen mit Spuren von Eisennieten, ein massiver gewölbter Knopf aus Bronze, durch Rinnen in 6 Segmente aufgeteilt, schliesslich eine stark zerstörte T'ang-oder Sung-Münze (Tafel II, 5). Ausgeschlossen ist auch nicht, dass vereinzelte Pfeilspitzen jünger sein können, als die Funde im Ganzen. Was den Schnallenrahmen anbetrifft, dürfte dieser, mit Rücksicht auf Funde von Altai und westlicheren Gegenden später sein als das Ende der jüngeren Han-Dynastie.

Hier wurden die vielen Übereinstimmungen zwischen skythischer und der Ananokultur einerseits und den hier beschriebenen Gräberfunden andererseits hervorgehoben. Wirklich skytische, vorsarmatische Kultur pflegt so wie die Ananokultur, im Grossen gesehen zwischen 600 und 200 v. Chr. Geb. datiert zu werden,

oder möglicherweise etwas früher. Wir haben also Grund anzunehmen, dass die Gräberfunde von Luan P'ing und Hsuan Hua vor der Zeit der älteren Han Dynastie liegen. Die äusserst sparsame Anwendung von Eisen trägt auch zu einer solchen Datierung bei. Aber eine nähere Einkreisung wird vielleicht möglich sein. Die Datierung der Messermünze macht es wahrscheinlich, dass die Gräber älter als 250 v. Chr. Geb. sind. Der von einem Ring umschlossene Hirsch müsste auf Grund von Analogien im Kaukasus auf etwa 400 zurückzuführen sein. Etwas später dürften hingegen die runden gewölbten Bronzebeschläge mit gestrichelter Kante sein. Die südrussischen Gegenstücke rühren von der Zeit um 300 v. Chr. her und scheinen nicht all zu gewöhnlich zu sein. Es ist wohl wahr, dass der Typus lange fortgelebt hat, und dass man in Westsibirien am Flusse Ob, derartige gegossene grobe Beschläge aus Weissbronze gefunden hat, die in das 9. Jahrh. n. Chr. Geb. zu datieren sind.<sup>1)</sup> Ich sehe mittlerweile keinen Grund dafür die Erscheinungen im Osten auf den weiten Feldern des eigentlichen Nomadengebietes gegenüber den Analogien im Westen jünger zu machen. Ich halte es also für wahrscheinlich, dass die Gräber bei Luan P'ing und Hsuan Hua nicht später angelegt wurden, als in der ersten Hälfte des 3. Jahrhunderts, dass dies aber möglicherweise schon zwischen 350 und 300 vor Chr. geschehen sei.

Es scheint eine allgemeine und wahrscheinlich richtige Ansicht zu sein, dass Bronzen derjenigen Art, welche in den hier beschriebenen Gräbern vorkommen, den alten Hunnen, den Hiung-nu der chinesischen Geschichtsschreiber, anhört haben. Vor der Han Dynastie scheinen diese in verhältnissmässig geringem Grade von chinesischer Kultur beeinflusst zu sein, aber statt dessen in hohem Grad von einer westlichen, die wir skythisch und vielleicht wesentlich iranisch nennen können.

## II.

### INHALT DES LUAN P'ING-GRABES.

1) *Bronzedolch* (Tafel I, 1), zweischneidig, mit Mittelgrat an der Klinge und mit dünnem, im Querschnitt ovalem Griff. Zwischen Griff und Klinge eine »Querstange«, unten in der Mitte eingekerbt. Griffende mit einem gerundeten horizontal durchbohrten Doppelknopf. L. 25,6 cm. (K. 10000: 1.)

2) *Tüllenaxt aus Bronze* (Tafel II, 1), in der Form einer Queraxt mit einer rein vertikalen Breitseite und einer schwach »gewölbten«, schiefen Seite und zwei schwach konkaven Schmalseiten. Im Querschnitt vierseitig, trapezoidisch. Das Schaftloch erreicht drei viertel der Axtlänge. Ringsum die Mündung eine erhöhte, flache Leiste. Schneide etwas konvex. L. 11,7 cm. (K. 10000: 9.)

3) Beschädigte *Tüllenaxt aus Bronze* (Tafel II, 4), wie die vorhergehende aber

<sup>1)</sup> T. J. Arne, *Västsibirisk kultur för 1000 år sedan* (Arkeologiska studier, tillägnade H. K. H. Kronprins Gustaf Adolf, Stockholm 1932).

grösser, unterhalb der Mitte abgebrochen, wobei der Schneideteil fehlt. Wahrscheinlich weniger gelungen beim Guss, denn die eine Schmalseite ist viel dünner als die andere. L. ca 9 cm. Der erhöhte Rand ringsum die Mündung ist wenig sichtbar. (K. 10000: 12.)

4) Ein viereckiger *Bronzemeissel* (Tafel II, 2), mit rektangulärem Querschnitt an der Mündung der Tülle. Die »Schmalseiten« sind breiter als die gewöhnlich s. g. Breitseiten, d. h. die Seiten die sich seitwärts der Längslinie der Schneide befinden. Die Schneide ist schwach konvex. Jetzige Länge 9,4 cm. In der Mitte der Breitseiten sind Gussnähte. (K. 10000: 10.)

5) Kleine breite, flache *Tüllenaxt* (Tafel II, 3), mit ovalem Querschnitt an der Mündung, die Schmalseiten mit Gussnähten. Ringsum die Mündung ein niedriger, erhöhter Wulst. L. 5,9 cm. Oben an der einen Breitseite ein breites, längliches Loch. (K. 10000: 11.)

6) Ein einschneidiges *Bronzemesser* (Tafel I, 7), mit gebogener Klinge, die Schneide konkav, der Rücken konvex; am Ende des schmalen Griffes ein ovaler Ring. Die Spitze ist abgebrochen. L. ca 16,9 cm. Ringdurchmesser 3,15 cm. (K. 10000: 3.)

7) Griffpartie und ein kleines Stück der Klinge eines Bronzemessers (Tafel I, 8), wie das vorhergehende. L. 9,5 cm. Ringdurchmesser 2,9 cm. (K. 10000: 5.)

8—9) Zwei Teile von einem *Bronzemesser* (Tafel I, 4), wie das vorhergehende, nämlich Ring und Griffpartie. L. des einen Stückes 3,8 cm, Ringdurchmesser 3,5 cm (K. 10000: 6 A, B.)

10) *Bronzemesser* (Tafel I, 2), mit kleiner Öse, breitem Griff und gebrochener Klinge. L. 9,7 cm, Ringdurchmesser 1,7 cm. (K. 10000: 4.)

11) *Messerklinge aus Bronze* (Tafel I, 6), der Griff mangelte. Etwas gebogen mit konkaver Schneide und konvexem Rücken. Eine Seite ist flach, die andere ist an der Basis mit einer Art Rinne versehen, durch Verdickungen längs des hinteren Teils von Rücken und Schneide gebildet. L. 14 cm. (K. 10000: 8.)

12) *Messerklinge aus Bronze* (Tafel I, 5), wie die vorhergehende aber etwas schmaler und kürzer. L. 11,8 cm. (K. 10000: 7.)

13) Kleines *Bronzemesser* (Tafel I, 3), mit kurzer schiefer Schneide wie ein Ledermesser. Der Griff mit einem Ring abgeschlossen und an der einen Seite mit einer Rinne versehen. L. 8,8 cm. (K. 10000: 2.)

14—24) *Pfeilspitzen aus Bronze*:

A) mit Schaftdorn

- a) Eine *dreiflügelige Pfeilspitze* (Tafel III, 9), Schaftdorn und Spitze sind derselben Länge. L. 5,1 cm. (K. 10000: 33 A.)
- b) Eine *Pfeilspitze mit zwei Widerhaken* (Tafel III, 10), (K. 10000: 33 B.)
- c) Eine *dreieckige Pfeilspitze* mit scharfen Ecken, ohne Flügel. Schaftdorn fehlt jetzt (Tafel III, 3), (K. 10000: 33 C.)

B) *ohne Schaftdorn*

- a) mit zwei *Widerhaken* und *Tülle* in der Spitze (Tafel III, 6, 7), 2 Exemplare (K. 10000: 33 D, E.)
- b) *Dreieckige Pfeilspitzen* ohne *Widerhaken* aber *geflügelt* (Tafel III 1, 2, 4, 5, 8). Eine, zwei oder drei Seiten sind durchbrochen; wenn alle drei Seiten, vielleicht absichtlich. *Tülle* in der Spitze. Fünf ganze Exemplare und ein fragmentarisches. L. ca 3 cm. (K. 10000: 33 F—K.)

25—27) *Pfeilspitzen aus Bein*

Drei *Pfeilspitzen* (Tafel III, 11, 12), mit vierseitigem Durchmesser und flachem Schaftteil, eine abgebrochen. L. 6,1, 5,8, 3,5 cm. (K. 10000: 47.)

28—37) Neun ganze *Gürtelbeschläge* und ein fragmentarischer aus Bronze. Von diesen ist einer quadratisch ( $4,2 \times 4,2$  cm), die anderen rechteckig (rektangulär). Von den letzteren gibt es zwei Grössen, nämlich  $4,2 \times 2,6$  (5 Ex.) und  $3,5 \times 2,3$  (3 Ex.).

Der *quadratische Beschlag* (Tafel IV, 1, XIV, 2), hat eine etwas konkave Oberfläche mit einem erhöhten Ornament. Die ganze Platte ist gegossen, die vier »Randseiten« etwas nach unten über den Boden hinausschiebend; zwei gegenüberliegende Randseiten sind unten konkav ausgekerbt, damit ein Riemen leichter durchgleiten kann, teils unter diesen Rändern, teils unter einem auf der Hinterseite angebrachten schmalen Eisenbande, das jetzt am Boden festgerostet sitzt. In der Nähe der Ecken sieht man auf der Unterseite Reste von vier Bronzenieten. Zwischen zwei dergleichen steckt eine Eisenniete, und eine andere hält das Eisenband fest. In den zwei einander gegenüberliegenden Randseiten, die nicht konkav sind, kommen zwei feine extra Nietlöcher vor. (K. 10000: 16.)

Die *grösseren rektangulären Beschläge* (Tafel IV, 2, 3), sind wahrscheinlich auch ganz gegossen. Auf der Unterseite der rektangulären, dekorierten Platte laufen längs der Langseiten zwei Leisten, unter denen der Riemen eingesteckt werden kann. Die Verzierung besteht aus Zickzacklinien, in horizontalen Reihen von der einen Langseite zur andern angebracht.

Die *drei kleineren rektangulären Beschläge* (Tafel IV, 4), tragen an der Unterseite ein breites Mittelband, unter welches der Riemen gesteckt wurde. Das Band ist möglicherweise festgelötet worden. Die Verzierung besteht aus Zonen, parallel mit den Schmalseiten, wobei die Mittelzonen mit Mäandern, die Enden mit einer Art Zahnornament geschmückt sind. (K. 10000: 15 A—L.)

*Tierförmige Bronzebeschläge für Textilien.*

38) Eine *Tigerfigur* (?) (Tafel V, 1), aus einer dünnen, schwach gewölbten Bronzeplatte verfertigt. Die Schenkel sind durch Spirale angedeutet, die Beine sehr kurz. Auch die Ohren sind mit inneren Spiralen gezeichnet. In den eingeritzten Kiefern sind die Zähne angedeutet. L. etwa 14,5 cm. An der Hinterseite zwei Ösen. (K. 10000: 17.)

39—45) Vier ganze und drei halbe kleine *Tigerfiguren* (Tafel V, 4, 5, 6), aus gegossenen, schwach gewölbten Bronzeplatten, mit Ösen an der Hinterseite und Nietlöchern. L. ca 4,5 cm. (K. 10000: 18, A—E.)

46—47) Zwei kleine *pferdeförmige*, liegende *Figuren* (Tafel V, 2, 3), aus Bronze mit drei Nietlöchern und zwei Ösen an der Hinterseite. Vom einen Pferde ist nur die vordere Hälfte bewahrt. Zu bemerken sind die erhöhten Kreise ringsum die Augenhöhle und das Loch am Vorderkörper. (K. 10000: 19 A, B.)

48) Ein *Pferdekopf* aus Bronze (Teil eines Beschlages; Tafel V, 7), mit einem erhöhten Ring, der das Auge bezeichnet, mit Mähne und Winkelornament an der Schnauze. Auf der Hinterseite eine Öse (K. 10000: 19 C.).

49) Vorderteil einer plastischen *Pferdefigur* aus Bronze (Tafel V, 8). An der Unterseite des Körpers eine Rinne. L. 1,6 cm.

50—51) Zwei gegossene *Gürtelhaken* aus Bronze (Tafel VI, 1, 2), mit einem Knopf an der Unterseite. Der eine ist massiv, der andere dünn und fragmentarisch. Beim letzteren ist der umgebogene Haken tierkopffähnlich. L. resp. 5 und 3,6 cm. (K. 10000: 27, 28.)

52—53) Zwei *Gürtelschnallen* mit Ring und Öse (Tafel VI, 3, 4). Am Ring ein tierkopffähnlicher (?) Knopf. Der eine Ring ist schwach geriefelt. L. 5 und 5,2 cm. (K. 10000: 32, 31.)

54) Ein offener, ovaler *Schnallenrahmen* (Tafel IV, 9), mit Spuren von Eisen an den offenen Enden. Verziert mit feinen guirlandeähnlichen Strichen. L. 6,1 cm. (K. 10000: 30.)

55) Bronzeschmuck in der Form einer *konischen Glocke* (Tafel VIII, 1) mit Öse an der Spitze. H. 3,3 cm. (K. 10000: 21.)

56—105) Fünfzig mittelgrosse, runde gewölbte *Knöpfe aus Bronze* (Tafel VII, 1—6, 13—15), mit einer langen Öse an der Hinterseite. Der Rand ist mit radialen Querstrichen verziert. Durchmesser 2—2,5 cm. (K. 10000: 36.)

106—233) 128 kleine *Knöpfe* (Tafel VIII, 30—32), derselben Art wie die vorhergehenden aber ohne Ornamente. Die meisten haben einen Durchmesser von etwa 1,3 cm, ca 10 Stück nur 1,00 bis 0,8 cm (K. 10000: 37). 25 Knöpfe zeigen oder zeigten Fadenfragmente unter der Öse.

234—307) 46 ganze und 28 fragmentarische *Bronzeperlen* (Tafel VIII, 35—37), in der Form von manchettenähnlichen Bronzeringen, etwa 0,8 cm in Durchmesser. (K. 10000: 42.)

308—326) 16 ganze und 3 fragmentarische *Bronzekrampen* (Tafel VIII, 33, 34), aus schmalen, auf der einen Seite geriefelten Bändern. L. 1,4 cm. (K. 10000: 41.)

327—388) 62 kleine *Doppelknopfbeschläge* (Tafel VIII, 26—29), bisweilen mit bewahrten unteren Ösen und mit festsitzenden Fadenfragmenten. L. 0,8 cm. (K. 10000: 44.)

389—397) 9 Exemplare eines herzförmigen oder mehr gerundeten, durchbrochenen *Bronzehängeschmucks* (Tafel VII, 8—12), mit zwei perforierten, vertikalen

kleinen Cylindern an den Seiten, wodurch Fäden gezogen worden sind. L. ca 1,8—2 cm. (K. 10000: 34 A—I.)

398—437) 29 ganze und 11 fragmentarische *Hängebleche* (Tafel VIII, 7, 8), aus Bronze von zwei verschiedenen Typen 1) mit einer schwach gewölbten, runden Endpartie, einer runden, mit konzentrischen Kreisen geschmückten Mittelscheibe und einer oberen Öse, 2) wie das vorhergehende aber mit einem meistens quergerillten Verbindungsgliede zwischen der Öse und der mittleren Scheibe. L. ca 2,5—3 cm. (K. 10000: 39.)

438—480) 27 ganze und 16 fragmentarische, kleine, längliche *Bronzebleche* (Tafel VIII, 9, 10), mit zwei Ösen an der Unterseite. Die Enden sind rund, schwach gewölbt, die eine Seite mit drei Ausbuchtungen oder Zacken, die andere mit zwei versehen. An einzelnen sind Gewebereste sichtbar. L. 2,3—2,5 cm. (K. 10000: 43.)

481—624) 116 ganze und 28 fragmentarische *trianguläre* (axtförmige) *Hängebleche* (Tafel VIII, 11—22), mit Queröse am Schmalende, wahrscheinlich gegossen. Geschmückt mit Vertikalstrichen am breiten Ende und Horizontalstrichen am oberen Teil, an einigen nur mit Horizontalstrichen. An vielen bleibt noch ein Faden in der Öse hängen, bisweilen mit kleinen bronzenen Doppel- oder Tripelperlen besetzt. L. ca 2 cm. (K. 10000: 38, 40.)

625) Ein durchbrochener *Bronzering mit einem horntragenden Hirschtier* (vielleicht Renntier) (Tafel V, 9). Ein Vorderbein und ein Teil des Vorderkörpers fehlen. Durchmesser 3,8—3,9 cm. (K. 10000: 20.)

626) Ein runder, etwas gewölbter *Bronzeknopf* (Tafel VII, 7), mit breiter Bandöse an der Hinterseite. Durchmesser: 3,3 cm. (K. 10000: 25.)

627) Ein flacher, fragmentarischer *Bronzebeschlag* (Tafel VI, 5), mit ursprünglich drei Spiralen, wie »laufender Hund« geordnet. An der Unterseite zwei längs des Schmuckes angebrachte Ösen. Jetzige Länge 3,9 cm. (K. 10000: 29.)

628) Runde gegossene *Hängeplatte* (Spiegel?) mit einer kleinen Öse unterhalb des äusseren Randes (Tafel VIII, 6). Durchm. 5,2 cm. (K. 10000: 23.)

629) Fragment einer halbrunden *Bronzeplatte* und andere Fragmente, die wahrscheinlich zu einem Gürtelstück gehören (?). (K. 10000: 24.)

630) Ein massiver, gewölbter *Bronzeknopf* (Tafel II, 6), mit von der Mitte radiierenden Riefeln oder Kannelyren und gewölbten Zwischenpartien. In der Mitte der Unterseite ein viereckiges Loch. Durchm. 4 cm. (K. 10000: 22.)

631—632) Zwei hohle, *viereckige Röhren* (Tafel IV, 7, 8), mit Winkelornamenten an zwei gegenüberstehenden Seiten geschmückt. Das eine Stück mit einfachen Winkeln ist vollständig und hat quadratischen Querschnitt, das andere mit Zig-zag oder Doppelwinkeln hat rektangulären Querschnitt. Länge resp. 9,6 und 6,85 cm. (K. 10000: 13 A, B.)

633—634) Zwei *pfriemenähnliche Bronzeegeräte* mit rektangulärem Querschnitt fast bis zur Spitze (Tafel IV, 5, 6). L. resp. 13,7 und 11,1 cm. (K. 10000, 14 A, B.)

635—640) *Sechs Hängeberlocken* aus Bronze (eine vielleicht aus Blei), von welchen eine durchbrochen ist, die anderen massiv (Tafel VIII, 2—5). Die durchbrochene hat fünf Seiten und eine Länge von 6,4 cm. Von den übrigen sind 3 gerundet und mit sechs Segmenten versehen, wohl nicht durchbrochen, aber den Durchbruch vermittels der Ornamentik nachbildend. Eine Berlocke mit sechs Segmenten ist ziemlich flach. Die sechste ist viereckig und mit 16 Segmenten versehen. (K. 10000: 26 A—F.)

641—828) Eine Menge von spiralenförmig (höchstens  $2\frac{1}{2}$  Windungen) aufgerollten *Bronzefäden* (Tafel VI, 7, 8), etwa 2 mm dick und mit einem Durchmesser wechselnd zwischen 3,5 und 5,5 cm, aber gewöhnlich ca 4 cm. Fünf sind ziemlich gut erhalten, 183 nur fragmentarisch. (K. 10000: 35.)

829, 830—852) Verschiedene kleine Silberfäden (Tafel VI, 6). (K. 10000: 46.)

Eine kleine grüne, rektanguläre *Türkisperle* und 22 kleine gelbweisse zylindrische *Perlen aus angebranntem Steatit oder Speckstein*. Die Perlen bestehen aus Magnesia und Kiesel-Säure (Analyse von Prof. Dr. Gr. Aminoff). (Tafel VI, 10). Eine von den Perlen hat ausnahmsweise schwarzbraune Farbe. (K. 10000, 45.)

853) Eine halbe bikonische Perle aus achatähnlichem Stein, vielleicht Jade (Tafel VI, 9). (K. 10000: 45.)

854) Eine halbe T'ang- oder Sung-münze, frühestens 904, spätestens 1275 n. Chr. geprägt (Tafel II, 5). (K. 10000: 49.)

#### INHALT DES HSUAN HUA HSIEN-GRABES.

1) *Tüllenaxt* (Tafel IX, 2), aus Bronze, lang und schmal, mit schmaler Schneide. Im Durchschnitt viereckig. An der Aussenseite der viereckigen Tüllenöffnung drei horizontale Wulste und zwei vertikale Leisten an den breitesten Seiten. Ein kleines Loch oben an der einen Seite. Schneidenbr. 1, 6, L. 10,75 cm. (K. 10001: 17.)

2) *Tüllenaxt* (Tafel IX, 4), aus Bronze mit rektangulärem, schwach trapezoidischem Durchschnitt. Eine Breitseite gerade, die andere nach der Schneide zu schwach gewölbt. L. 9,45 cm. (K. 10001: 18 A.)

3) *Tüllenaxt* (Tafel IX, 5), aus Bronze mit trapezoidischem Querschnitt, der vorigen ähnlich. an der etwas schmälere Breitseite ein S-förmiges Loch. L. 7,9 cm, Schneidenbreite 4,2 cm. (K. 10603: 4.)

4) Kleine, defekte *Tüllenaxt* (Tafel IX, 3), aus Bronze mit gerundet viereckigem Durchschnitt. Die Schneide etwas verbogen. L. 5,65 cm (K. 10001: 18 B.)

5) *Tüllenaxt* mit rektangulärem Durchschnitt. Eine Breitseite gerade, die andere schwach gewölbt. L. 6,65 cm, Schneidenbreite 3,8 cm. (K. 10603: 3.)

6) *Bronzedolch* (Tafel IX, 1), mit blattförmig dünnem, längs der Mitte verstärktem Stiel, oben versehen mit einem innen vertieften Knopf, dessen Ränder horizontal ausgebreitet sind. Die Klinge ist durch eine dreiteilige Mittelleiste verstärkt. Die Spitze ist abgebrochen. L. 21,1 cm. (K. 10603: 1.)

7) Einschneidiges, leicht gebogenes *Bronzemesser* (Tafel IX, 7), mit schmalem Stiel, im Durchschnitt fast rektangulär und oben mit einem grossen ovalen Ring abgeschlossen. An der Spitze beschädigt. L. 15,2 cm. (K. 10603: 2.)

*Vier Messerfragmente* (K. 10001: 13 c, d, e, f.)

8) *Messermünze* (Tafel IX, 6), aus Bronze mit schief abgeschnittener Spitze, dünnem Stiel mit Doppelleisten an jeder Seite, Ringabschluss zerbrochen. Mit dem Schriftzeichen *T'u* (土) in Relief an der einen Seite. L. 15,9 cm. (K. 10001: 13 A, B.)

9) Fragment eines *Dolchgriffes* (Tafel XIV, 3), nämlich ein Stück des Stieles und des ausgehöhlten Knopfes. L. 4,2 cm. (K. 10603: 79.)

10) *Pfriemen* oder Nagel aus Bronze ohne Kopf mit rektangulärem Durchschnitt. L. 13 cm. (K. 10001: 14 A.)

11) *Pfriemen* oder Nagel aus Bronze (Tafel XI, 5), ohne Kopf und mit rektangulärem Durchschnitt. L. 8,6 cm. (K. 10001: 14 B.)

12) Defekter *Pfriemen* oder Nagel aus Bronze, (Tafel XI, 4), spiralenförmig geriefelt. L. 7,1 cm. (K. 10603: 9.)

13) *Nagel* aus Bronze (Tafel XI, 1), mit fast flachem Kopfe; Oberteil mit einander kreuzenden Spiralleisten geschmückt, unterteil mit viereckigem Durchschnitt. L. 8,8 cm. (K. 10603: 8.)

14) Fragmentarisches Stück eines *Bronzenagels* mit viereckigem Durchschnitt. L. 5,2 cm. (K. 10001: 14 c.)

15) Bronzene *Pfeilspitze* (Tafel X, 8), mit zwei langen Widerhaken, facettiertem, im Querschnitt rhombischem Mittelteil und fast ebenso langem Stiel. L. 4,55 cm. (K. 10603: 22.)

16) Bronzene *Pfeilspitze* (Tafel X, 9), mit zwei Widerhaken und tüllenförmigem Mittelkörper. L. 4,4 cm (K. 10603: 23.)

17) *Glockenförmiges konisches Anhängsel* aus Bronze, mit oberer Öse und an zwei Seiten durchbrochen. H. 3,5 cm. (K. 10001: 12 A.)

18) *Glockenförmiges Anhängsel* wie das vorige, in zwei Stücken zerbrochen. H. 4,05 cm. (K. 10001: 12 C, D.)

19) Zerbrochenes *glockenförmiges Anhängsel* wie das vorige, aber nur eine Seite durchbrochen H. 4,1 cm. (K. 10001: 12 B.)

20) *Glockenförmiges Anhängsel* (Tafel XI, 10), wie die vorigen, zweiseitig durchbrochen. H. 4,15 cm. (K. 10603: 10.)

21) *Glockenförmiges Anhängsel* (Tafel XI, 11), wie die vorigen. H. 3,9 cm. (K. 10603: 11.)

22) *Glockenförmiges Anhängsel* (Tafel XI, 9), wie die vorigen. H. 4,9 cm. (K. 10603: 16.)

23) *Glockenförmiges Anhängsel* wie die vorigen, verdrückt. H. 4,25 cm. (K. 10603: 12.)

24) *Glockenförmiges Anhängsel* wie die vorigen. H. 3,5 cm. (K. 10603: 17.)



25) Glockenförmiges *Anhängsel* (Tafel XI, 7), wie die vorigen. H. 2,7 cm. (K. 10603: 19.)

26) Glockenförmiges *Anhängsel* (Tafel XI, 12), wie die vorigen. H. 3,3 cm. (K. 10603: 18.)

27) Zerbrochenes, glockenförmiges *Anhängsel* wie die vorigen. H. 4,5 cm. (K. 10603: 13 a, b.)

28—30) Fragmente von drei glockenförmigen *Anhängseln*, von denen eins nicht durchbrochen ist. (K. 10603: 14, 15, 20.)

31) Glockenförmiges, bogenförmiges *Anhängsel* (Tafel XI, 8), von zwei Seiten flach gedrückt, ohne unteren Rand. H. 3,2 cm. (K. 10603: 21.)

32) *Tierförmiger Bronzebeschlag* (Tafel X, 10), (eher Raubtier als Pferd obgleich mit Mähne) mit gekrümmten nach vorne gestreckten Beinen. Am Kopf, an Schenkeln und Füßen ausgehöhlte Kreise, ursprünglich mit Einlagen. L. 6,35 cm. An der Hinterseite zwei Ösen. (K. 10001: 10 A.)

33) *Raubtierähnlicher Riemenbeschlag* (Tafel X, 11), aus Bronze mit nach vorne gestreckten Füßen und mit Schweif. Hinten zwei Ösen. L. 4,6 cm. (K. 10001: 10 D.)

34) *Raubtierähnlicher Riemenbeschlag* (Tafel X, 12), aus Bronze, wie vorhergehender, an mehreren Stellen durchlöchert. L. 4,7 cm. (K. 10001: 10 E.)

35) Hinterkörper von einem *raubtierähnlichen Beschlag* (Tafel X, 16). L. 2 cm. (K. 10603: 82.)

36—37) Vorder- und Hinterkörper von *raubtierähnlichen Beschlägen* (Tafel X, 14, 15). L. resp. 1,85 und 2,85 cm. (K. 10603: 83, 81.)

38) Mittlerer Teil eines grossen *raubtierähnlichen Beschlages* (Tafel X, 13). L. 3,6 cm. (K. 10603: 80.)

39) Kleine plastische *Tierfigur*, (Tafel X, 19), innen hohl. L. 2,8 cm. (K. 10603: 78.)

40) Plastische *Tierfigur* (Tafel X, 18), wie die vorige. L. 2,5 cm. (K. 10603: 10 C.)

41) Vorderteil eines ähnlichen plastischen *Tieres* (Tafel X, 17). (K. 10603: 84.)

42) Runder, schwach gewölbter *Bronzeknopf* (Riemenbeschlag) (Tafel XII, 15), mit unterer Öse. Geziert mit zwei konzentrischen Kreisen, zwischen welchen sieben S-förmige Eingravierungen (Mäanderimitation). Zwischen dem äusseren Kreise und dem Rande schiefe Striche. Im Durchmesser 2,95 cm. (K. 10603: 40.)

43) Stark gewölbter *Bronzeknopf* (Tafel XII, 20), mit unterer Öse und einer Art von ringsum laufender Krempe. Durchmesser 3,1 cm. (K. 10603: 41.)

44—58) Fünfzehn runde, schwach gewölbte *Bronze-Knöpfe* (Tafel XII, 16, 17, 23, 24), geziert mit einem äusseren Kreise von radial gestellten Strichen und mit unterer Öse. Durchmesser wechselnd zwischen 3,1 und 2,1 cm. (K. 10603: 25—38; (K. 10001: 1.)

59—60) Zwei schwach gewölbte *Bronzeknöpfe* wie die vorhergehenden aber mit längeren Radialstrichen. Der kleinere stark beschädigt. Durchschnitt 2,7 und 2 cm. (K. 10603: 24, 39.)

61) Ziemlich flacher, durchbrochener *Bronzeknopf* mit unterer Öse. Durchm.  $3 \times 2,7$  cm. (K. 10603: 42.)

62—106) 46 kleine, schwach gewölbte *Knöpfe* aus Bronze mit unterer Öse. (Tafel XII, 18, 19, 21, 22.) Durchm. ca 1,2 cm. Einige fragmentarisch. (K. 10001: 10603: 69—76.)

107) Offener *Bronzering* (Tafel XIV, 4), mit spitzovalem Durchschnitt, ziemlich flach und mit Querriefeln geziert. Durchmesser 2,9 cm. (K. 10603: 5a.)

108) Rektangulärer *Riemenbeschlag* aus Bronze, die Schmalseiten umgebogen und vereinigt durch ein schmäleres Band. Querüber durch acht Zonen geziert, die mittleren mit Mäander-Ornamenten. L. 3,7 cm, Br. 2,4 cm. (K. 10001: 9.)

109—111) 11 Fragmente von mindestens drei ähnlichen *Riemenbeschlägen* (K. 10001: 9 etc.), eins mit zickzackähnlichen Ornamenten.

112) Fast rechteckige *Hängeplatte* (Tafel XI, 3), aus Bronze mit flacher, gerundeter Öse. L. 3,8 cm. (K. 10001: 15.)

113) Kleine flache, fast zylindrische *Bronzekugel* (Tafel X, 20), (gewichtförmig) mit eingeritzten Zeichen an der einen Flachseite. Durchmesser 1 cm, H. 0,55 cm. (K. 10603: 77.)

114—126) Dreizehn trianguläre, spitze, flache *Bronzegehänge* (Tafel XII, 1—14), mit Öse an der Spitze und gestreift an der einen Seite, teils quer, teils in der Längsrichtung. L. 1,5—1,9 cm. (K. 10001: 4, 5.)

127—131) Fünf trianguläre *Gehänge* wie die vorhergehenden. (K. 10603: 43—47.) (Vgl. Tafel XII, 1—14.)

132—173) 42 bronzene *Hängezierate* (Tafel XII, 27—36), bestehend aus einer oberen Queröse, einem fast ovalen flachen Mittelteil und einem unteren runden, schwach gewölbten Endteil. Der mittlere Teil ist mit konzentrische Kreisen geschmückt, oberhalb deren sind Striche angebracht L. 3,3—2,5 cm. (K. 10001: 5—7.)

174—176) Drei *Hängezierate* wie die vorhergehenden, aber grösser und mit quadratischer Strichelung. (Tafel XII, 25, 26.) L. 3,3 cm. (K. 10001: 6.)

177—183) Sieben *Hängezierate* wie die vorhergehenden, oben doch mit quadratischer Strichelung (K. 10603: 48—54). Drei fragmentarisch.

184—208) Fünf und zwanzig Bruchstücke von *Hängezieraten* obiger Art. (K. 10001: 7.)

209—331) 123 bronzene *Gürtelzierate* (Tafel XIII, 1—7), aus oblongen Blechen mit abgerundeten Enden und zwei Zacken am einen Längsrande, drei an dem andern. Auf der unteren Seite zwei längsgehende Ösen zum Annähen. L. 2—2,4 cm. Zum Teil mit Fadenspuren unter den Ösen. (K. 10001: 8.) 83 *Fragmente* derartiger *Zierate*.

332—341) Zehn *Hängezierate* (Tafel XIII, 8—10), wie die vorhergehenden, davon zwei ohne Zacken an einer Seite und einer mit *vergoldeten* Streifen. (K. 10603: 55—68.)

342—352) Elf kleine *Doppelknöpfe* aus Bronze (Tafel XIII, 11—14), achtförmig mit einer gewölbten und einer flachen oder schwach konkaven Seite. L. 0,8 cm. (K. 10001: 3.)

353) Ein offener *Ring* (Tafel XI, 13 a), aus dünnem Bronzedraht. Durchmesser 3 cm. (K. 10603: 6.)

354) Ein halber *Ring* (Tafel XI, 13 c), aus rundem, etwas dickerem Bronzedraht. Durchmesser 4,05 cm. (K. 10603: 7.)

355) Ein *Spiralring* aus dünnem Bronzedraht (Tafel XI, 13 b). Durchmesser 4,05 cm. (K. 10001: 11.)

356—365) Zehn Fragmente von *Ring*en aus Bronzedraht.

366) Quergeriefelter, nadelähnlicher *Hängeschmuck* aus Bronze (Tafel XI, 2), mit durchlöcherter Dicken. L. 4,1 cm. (K. 10001: 16.)

367—368) Zwei durchbrochene, mit zwei Seitenösen versehene *Hängezierate* (Tafel X, 22, 23), triangulär mit einer gerundeten Seite. L. 1,8 cm. (K. 10001: 2.)

369—373) Fünf *Bronze*fragmente. (K. 10603: 85—89.)

374—429) *Perlen*.

37 kleine, weisse flache zylindrische *Perlen* (Tafel XIII, 28—35), wahrscheinlich aus *Alabaster*. Durchmesser 3—4 mm. H. 1—3 mm. (K. 10001: 19.) Eine Perle mehr abgerundet.

Eine grosse weisse, runde *Alabasterperle* (Tafel XIII, 19), flach bikonisch, d. h. mit abgeschnittenen Enden. Grosses Mittelloch. Durchmesser 2,6 cm, H. 1,4 cm. (K. 10001: 26.)

Zwei, weisse, cylindrische *Beinperlen* (?) (Tafel XIII, 36, 16). L. resp. 2,9 und 0,8 cm. Durchmesser 0,55 und 0,45 cm. (K. 10001: 20, 20 B.)

Zehn *Türkis*perlen (Tafel XIII, 18, 20, 21, 27, 17, 22, 23, 37, 39, 26), davon vier cylindrisch, drei quadratisch oder rektangulär, flach, zwei länglich gerundet, eine dick, trapezoidisch. L. resp. 2,65, 1,9, 1,85, 1,05, 0,9, 1,1, 2,6, 0,6, 0,6. 2,1 cm. (K. 10001: 21, 23, 24, 25.)

Drei runde, flache *Karneolperlen*. (Tafel XIII, 24, 25, 38). Durchmesser 0,95, 0,6, 0,5 cm. (K. 10001: 22.)

Eine spulenförmige *Bronzeperle* (Tafel X, 21). L. 1 cm. (K. 10001: 33.)

Eine rektanguläre, facettierte, grüne *Steinperle* (Tafel XIII, 15), mit doppelten Löchern,  $2,3 \times 1,9 \times 0,8$  cm. (K. 10001: 27.)

430) Fünf Reste vom *Schädel* und langen *Knochen*. (K. 10001: 28—32.)

Die meisten Fragmente sind nicht extra gezählt.



**Die abgebildeten Originalgegenstände stammen:**

**Tafel I—VIII aus dem Luan P'inggrabe,**

**Tafel IX—XIII aus dem Hsuan Huagrabe,**

**Tafel XIV, 1, 3, 4, aus dem Hsuan Huagrabe,**

**Tafel XIV, 2 aus dem Luan P'inggrabe,**

**Tafel XIV, 5, 6, vom Gouvernement Tomsk, Sibirien,**

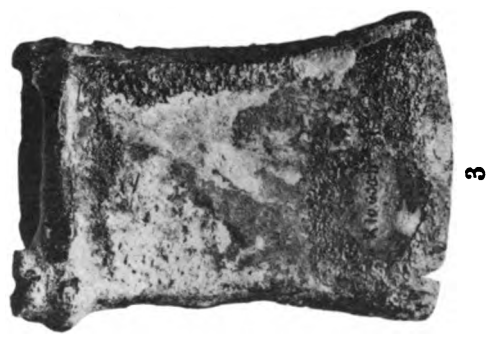
**Tafel XIV, 7, 8, von Jelisavetskaja (Jelisavetinskaja) Stanitsa, Kubangebiet,  
Kaukasien.**















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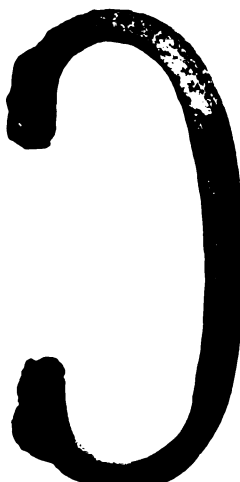
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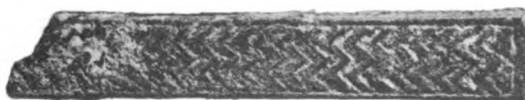
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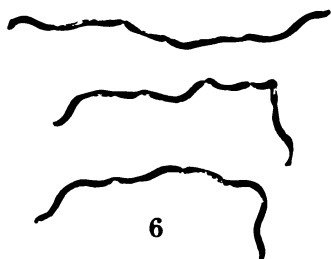
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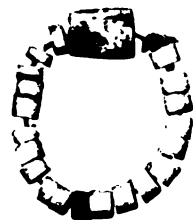
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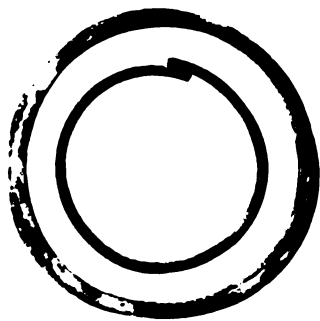
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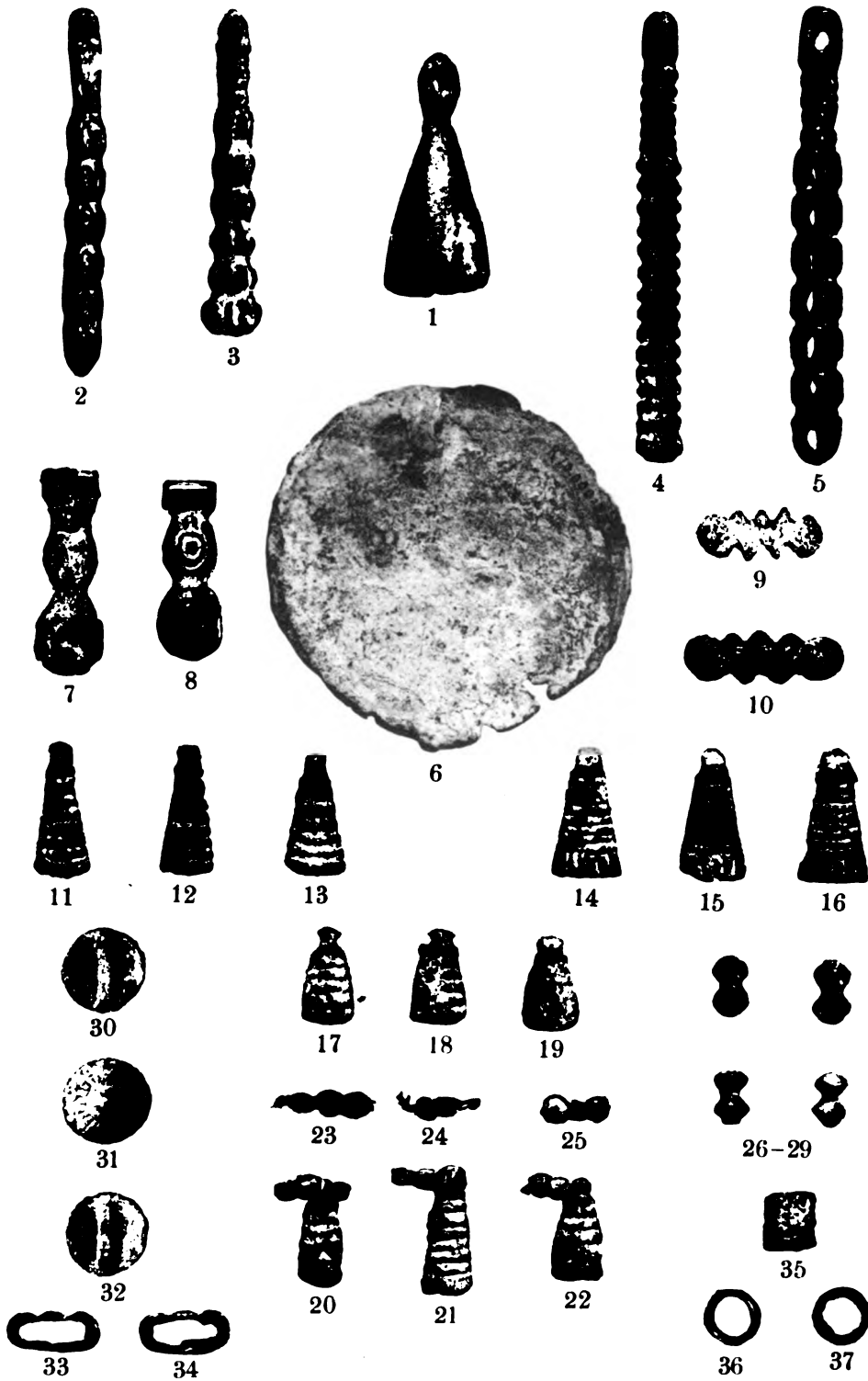


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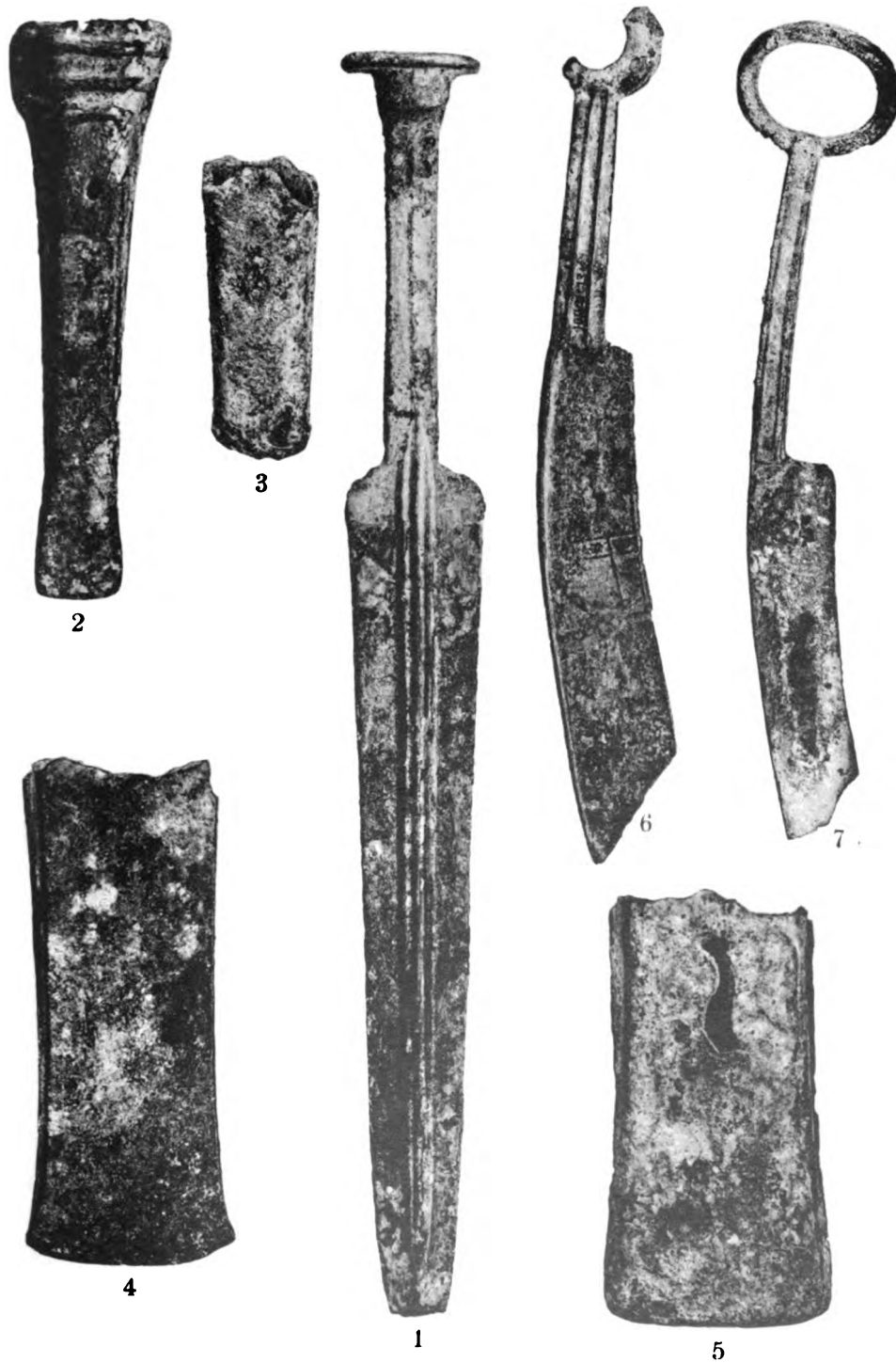


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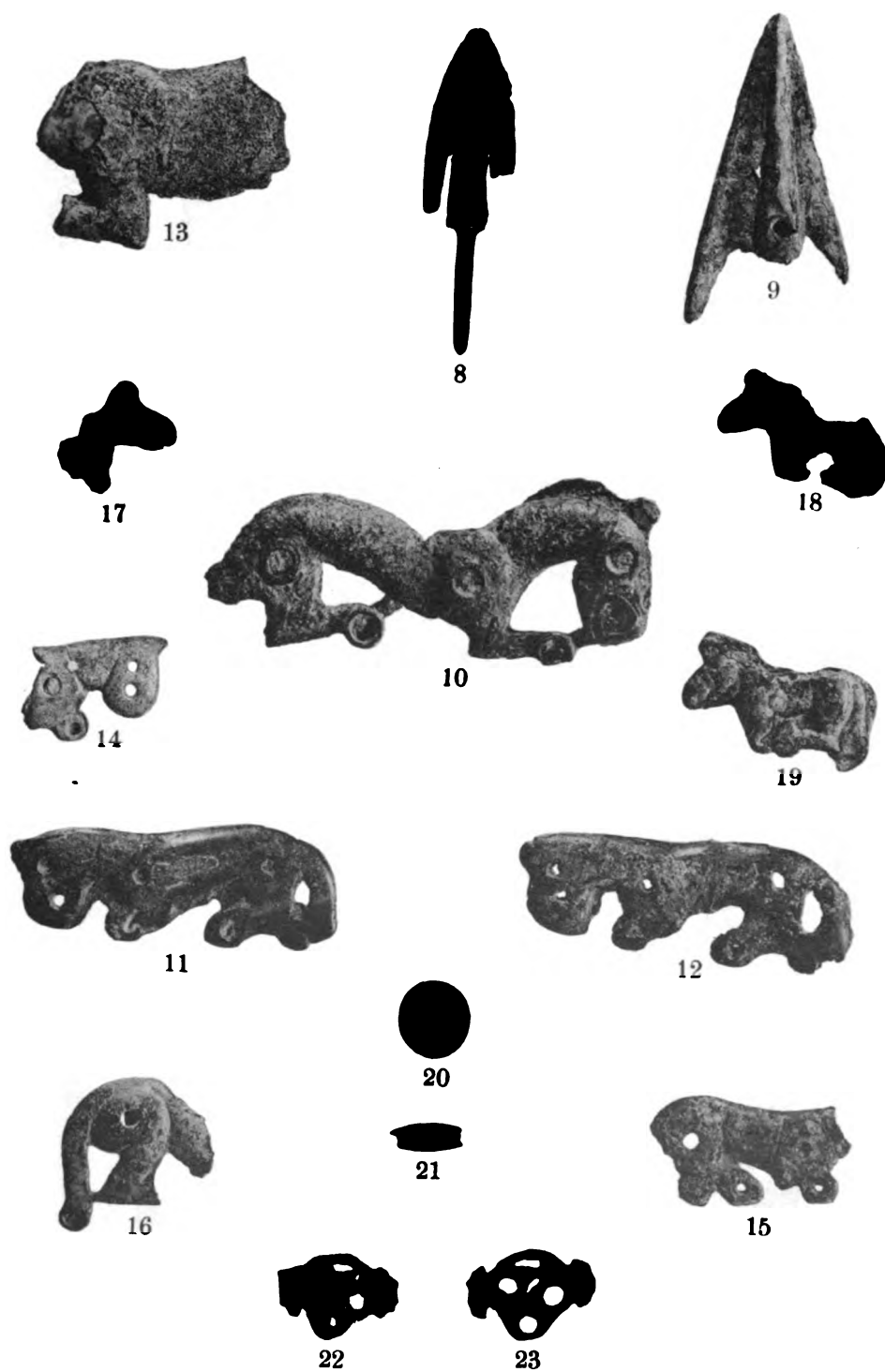
















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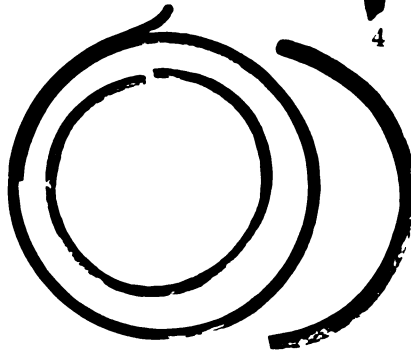
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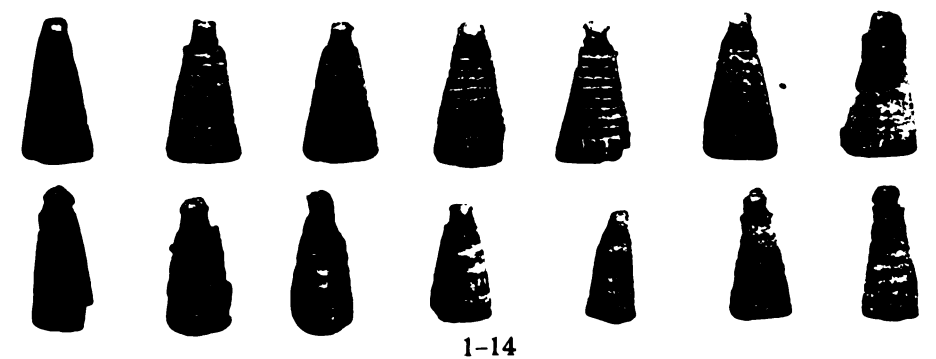


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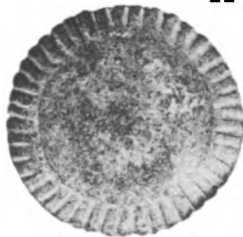
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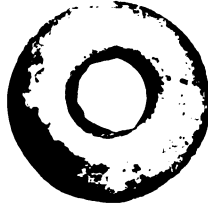
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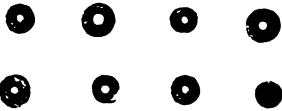
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